EFFECTIVENESS OF CLINICAL PATHWAY FOR POSTNATAL MOTHERS WITH VAGINAL DELIVERY UPON THE KNOWLEDGE AND PRACTICE OF NURSES AND MATERNAL OUTCOME

By

K.M.SATHYA DEVI

A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R.MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

APRIL 2012

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DECLARATION

I hereby declare that the present dissertation entitled **"Effectiveness of Clinical Pathway for Postnatal Mothers with Vaginal Delivery upon the Knowledge and Practice of Nurses and Maternal Outcome"** is the outcome of the original research work undertaken and carried out by me under the guidance of **Dr. Latha Venkatesan**, MSc (N)., M.Phil., Ph.D., Principal, Apollo College of Nursing, Chennai. I also declare that material of this has not found in any way, the basis for the award of any degree or diploma in this university or any other universities.

M.Sc (N) II Year

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SYNOPSIS

A Quasi- Experimental Study to Assess the Effectiveness of Clinical Pathway for Postnatal Mothers with Vaginal Delivery upon the Knowledge and Practice of Nurses and Maternal Outcome at Apollo First Med Hospitals, Chennai.

The Objectives of the Study

1. To assess the pre and post-test level of knowledge and practice of nurses regarding clinical pathway for postnatal mothers with vaginal delivery.
2. To evaluate the effectiveness of clinical pathway for postnatal mothers upon the knowledge and practice of nurses.
3. To assess and compare the maternal outcome in control and experimental group regarding clinical pathway for postnatal mothers with vaginal delivery.
4. To determine the level of satisfaction upon nursing practice in the control and experimental groups of postnatal mothers with vaginal delivery.
5. To determine the association between the selected demographic variables of nurses with their pre and post-test level of knowledge regarding clinical pathway for postnatal mothers with vaginal delivery.
6. To determine the association between the selected demographic variables with maternal outcome and level of satisfaction in control and experimental groups of postnatal mothers with vaginal delivery.
7. To determine the association between the selected obstetric variables with maternal outcome and level of satisfaction in control and experimental groups of postnatal mothers with vaginal delivery.

The conceptual framework was made based on Jean Ball Deck Chair theory. The variables of the study were knowledge and practice. Null hypothesis were formulated. The level of confidence selected was $p<0.001$. An extensive review was made based on the opinions of the experts. A Quasi experimental study of one group pre-test and post-test design for nurses, control and experimental groups of postnatal mothers were used. The study included 40 nurses and 60 postnatal mothers by purposive sampling technique. The study was conducted in at Apollo First Med Hospitals, Chennai. The research data collection period was from 7am-7pm on June 17th to July 17th 2011.

The researcher approached nurses in all the postnatal wards like A, D, E, H & I and selected 40 nurses for the study by purposive sampling technique after obtained verbal consent. Maintained rapport and explained about the aims of research to the nurses which are going to be conducted for the postnatal mothers with vaginal delivery. After obtained verbal consent from the nurses, assessed pre-test knowledge for the nurses regarding the clinical pathway for postnatal mothers with vaginal delivery through structured knowledge questionnaire. 30 postnatal mothers with vaginal delivery were selected by using purposive sampling after obtained written consent and observed the existing nursing practice. The researcher collected the data by daily 12 hours of nursing practice from 7am-7pm and the nursing activities were collected from the night shift staff and the records of the mother.

Checked the maternal outcome and their level of satisfaction with the existing nursing practice through the rating scale. The nurses were taught about the clinical pathway with the list of practices for postnatal mothers with vaginal delivery through the structured teaching programme and implemented the clinical pathway for the

practice. The researcher selected 30 postnatal mothers by purposive sampling. One week after structured teaching of clinical pathway and implementation of practice checklist, the researcher administered the post-test questionnaire to the same nurses and assessed their knowledge. Observed the nursing practice & checked the maternal outcome and their level of satisfaction with the rating scale. The compliance, partially compliance and non-compliance activities were monitored with the clinical pathway practice checklist. The data's were analysed be descriptive and inferential statistics.

Major findings of the study

- Majority of the nurses were single (90%), between the age of 21-24 years (77.5%) and had no previous information about clinical pathway (77.5%). Most of the nurses are having educational status of Diploma in nursing (60%), with income of about Rs.5001-Rs.7500 (55%), belongs to the religion of Christians (55%). The significant no of years of experience of nurses are more than 4 years of experience (45%).
- All the mother in the control and experimental group were earning income of about ≥Rs. 10,001 (100%). Majority of the mother in the control group living in Joint family (83.3%), belongs to Hindu (76.7%). Most of them are under-graduate (70%), married at the age of 21-25 years (63.3%), and working (60%). Significant percentage of the mothers is in the age group 21-25 years (46.7%).
- Most of the mothers in the experimental group living in the Joint family (73.3%) and belongs to Hindu (63.3%), not working (63.3%). Significant percentage of mothers had graduate and post graduate (46.7%) and married at the age of 21-30 years (46.7%).

- All the mothers in the control group are attended ≥ 4 visits (100%). Majority of the mother had no complications (96.7%) and no co-morbidity (86.7%). Most of them were primi gravida (73.3%), delivered at gestational weeks of 38-39 (73.3%) and delivered through normal vaginal delivery (63.3%) respectively.
- In the experimental group of mothers most of them delivered at the gestational weeks of 38-39 (56.7%) and order of pregnancy were primi gravida (56.7%). All the mothers were attended ≥ 4 antenatal visits (100%), not developed any complications (100%), Majority of them had normal vaginal delivery (93.3%) and presence with no co-morbidity (86.7%).
- In the pre-test most of the nurses (62.5%) had moderately adequate knowledge. Majority of the nurses (95%) had adequate knowledge after the post-test.
- Majority of the postnatal mothers in the control group (73.4%) were highly satisfied with the nursing care. In the experimental group, majority of the mothers (86.7%) were highly satisfied with the nursing care after the implementation of clinical pathway.
- Majority of the mothers were not developed any complications (93.3%) in the control group whereas in experimental group (100%) none of them were not developed any complications (100%).
- Majority of the nurse practice in control group falls as compliance activities during Day 1 and Day 2 are 90.47% & 95.12% respectively. Majority of the nurse practice in the experimental group as compliance activities during Day 1 and Day 2 are 100%.
- Both the experimental and control group of postnatal mothers were having compliance of activities (100%). The level of confidence was 99.9% and its

shows the effectiveness of clinical pathway upon the level of satisfaction and maternal outcome of the postnatal mothers.

- Mean and standard deviation of level of knowledge of nurses were high in the post-test (M= 22.3, SD=2.37) in comparison to the pre-test (M=14.7, SD=3.33). The level of confidence was 99.9% and it shows the effectiveness of clinical pathway upon the nurses on postnatal mothers with vaginal delivery. Hence the null hypothesis H_{o1} was rejected.
- Mean and standard deviation of knowledge scores of nurses in the pre-test were low than the post-test. The level of confidence was 99.9% and it shows that effectiveness of the clinical pathway upon the nurses on postnatal mothers with the vaginal delivery. Hence the null hypothesis Ho_1 was rejected.
- Mean and standard deviation of practice scores of nurses were high after the administration of clinical pathway (M= 232.8, SD=7.88) in comparison to the before clinical pathway administration (M=211.8, SD=2.8). The level of confidence was 99.9% and it shows the effectiveness of clinical pathway upon the nurses on postnatal mothers with vaginal delivery. Hence the null hypothesis Ho_1 was rejected.
- The level of confidence was 99% and it shows that effectiveness of clinical pathway upon the level of satisfaction of the postnatal mothers with the Mean and standard deviation in the experimental group (M= 74.46, SD=6.27) was high when compared to the control group (M=67.5, SD= 10.73). Hence the null hypothesis Ho_2 was rejected.
- Mean and standard deviation of the maternal outcome of postnatal mothers in the experimental group (M= 0.93, SD=1.43) is lesser when compared to the

control group (M=3.26, SD= 3.55) which indicates the experimental group mothers were not developed any complications. The level of confidence was 99% and it shows that effectiveness of clinical pathway upon the maternal outcome of the postnatal mothers. Hence the null hypothesis Ho_2 was rejected.

- Mean and standard deviation of practice scores of nurses were low in the Control group (M= 73.26, SD=2.91) in the Day 1 and Day 2 (M= 83.03, SD= 1.09) comparison to the Experimental group of Day 1 (M=35.56, SD= 1.5) and Day 2 (M= 40.63, SD= 0.55). The level of confidence was 99.9% and it shows the effectiveness of clinical pathway upon the nurses on postnatal mothers with vaginal delivery. Hence the null hypothesis Ho_1 was rejected.
- Mean and standard deviation of level of satisfaction in regard to rest, position, personal hygiene, safety and spiritual need was low in the control group (M=16.76, SD=3.11) when compared to the experimental group (M= 18.83, SD= 1.62). The level of confidence was 99.9% and it shows the effectiveness of the clinical pathway upon the level of satisfaction of the postnatal mothers. Hence the null hypothesis Ho_1 was rejected.
- The mean and standard deviation was given about the components in the clinical pathway practice checklist. The level of confidence was 99.9% ($P<0.001$) in regard to oxygenation, comfort, rest, personal hygiene, safety, spiritual, activity, diversional support and health education and 99% confidence at the level of $P<0.01$ in regard to Immediate assessment, nutrition, and regulation. Hence the null hypothesis Ho_1 rejected.
- Mean and standard deviation of level of satisfaction of postnatal mothers in the experimental group (M= 74.46, SD=6.27) is high when compared to the control

group (M=67.5, SD= 10.73). The level of confidence was 99% and it shows that effectiveness of clinical pathway upon the level of satisfaction of the postnatal mothers. Hence the null hypothesis Ho_2 was rejected.

- Association between the years of experience and educational qualification in the level of knowledge for the nurses in the pre- test and post-test. It has proven that there is association between the selected demographic variables and level of knowledge. Hence the null hypothesis Ho_3 was rejected.
- Association between the level of satisfaction with regard to age in years, educational qualification and age at marriage in the control group of postnatal mothers and age at marriage in the experimental group. Hence null hypothesis Ho_4 was rejected.
- There is no association between age, religion, occupation and income per month with the maternal outcome in the control group of postnatal mothers. Hence null hypothesis Ho_4 was retained. No statistics could be applied to find the association between selected demographic variables and the maternal outcome.
- There is association between the levels of satisfaction with regard to gestational weeks at delivered in the control group and order of pregnancy in the experimental group. Hence null hypothesis Ho_5 was rejected.
- There is no association between gestational weeks at delivered, no of antenatal visits, order of pregnancy and mode of delivery in the control group of postnatal mothers and the maternal outcome. Hence null hypothesis Ho_5 was retained. No statistics could be applied to find the association between selected obstetrical variables and the maternal outcome.

Recommendations

- The same study can be conducted with larger number of samples of postnatal mothers.
- A similar study can be conducted by using prospective study and retrospective.
- The study can be conducted at different settings.
- A study can be conducted at different clinical conditions.
- A study can be conducted with each nursing personnel individually for their overall nursing activities.
- A comparative study between two clinical settings can also be conducted.

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Introduction

CHAPTER I

INTRODUCTION

Background of the Study

"It is only in the act of nursing, that a woman realizes her motherhood

Invisible and tangible fashion, it is a joy of every moment"

-Honor De Balzac

Pregnancy is a period of expectant waiting and one that all of us aspire to experience at least once in our lifetime. Widespread concerns are being voiced in the western world about rising rates of childbirth interventions and the postnatal care. In 2010, researchers from the University of Washington and the University of Queensland in Brisbane, Australia, estimated global maternal mortality in 2008 at 3,42,900 (down from 526,300 in 1980), of which less than 1% of MMR occurred in the developed world. However, most of these deaths have been medically preventable for decades, as treatments to avoid such deaths have been well-known since the 1950s.

Midwifery, the practice supporting a natural approach to birth, enjoyed a revival in the United States during the 1970s. However, although there was a steep increase in midwife-attended births between 1975 to 2002 (from less than 1.0% to 8.1%) most of these births occurred in the hospital. The Central Intelligence Agency World fact Book shows that the World's birth rate was 19.15/1000 populations/year, 252 births/ min, 4.2 births/every second and India's birth rate was 20.97/1000 populations (January 9, 2012), Tamilnadu 16.3/1000 and Chennai 15.3/1000 respectively.

According to RCH programme in India (2010-11), Postpartum complications developed within 14hrs of delivery 9,639(73%) and 7653(58%) during 2-14 days of

delivery were reduced from 10,212(77%) within 14hrs and 8007 (61%) within 2-14 days of delivery. The International Conference on population and development in 1994 had recommended reduction in maternal mortality by at least 50% of the 1990 levels by the year 2000 and further one half by the year 2015. Sample Registration System registered till July 7th 2011 shows that maternal mortality rate of India was 212 and Tamilnadu was 97 between the years 2007-2009.

Midwifery is a health care profession in which providers offer care to child bearing women during pregnancy, labour and during the postpartum period. They also help care for the new-born and assist the mother with breastfeeding. In addition to providing care to women during pregnancy and birth, also provide primary care to women, well-woman care related to reproductive health, annual gynaecological exams, family planning, and menopausal care.

Women with spontaneous deliveries spent on average of one day in hospital after delivery, women with instrumental deliveries spent one or two days and women with caesarean deliveries between two and four days, 14% of women had episiotomy (2004-2006). Thus the length of hospital stay for the women undergoing labour can be reduced by promoting natural mode of delivery. The cares towards the postpartum women by the midwives are 24.3% were taught on genital care, 16.2% were taught on breast feeding, 13.5% on baby care and 29.7% on good feeding habits for mothers (University of Buea, 2009).

In order to provide a high quality of care, it is necessary to develop standard of care and appropriate evaluation tools for the nurses so that professional aspects of

assurance and attention will be given to the individual needs and responses to clients. There are two categories in standards of care are external and internal standards. In this, Clinical pathway is one kind of internal standard, which can be developed according to institutional policies.

A clinical pathway is the integrated care map framed with the necessary and time bound care by the multi-disciplinary team to reduce the length of hospitalization say, cost-effectiveness, improves the level of satisfaction and patient outcome. In this study, researcher devised the clinical pathway to support postnatal period by necessary interventions with set of timely framed care to improve the level of satisfaction and to evaluate of maternal outcome. The study also investigated the implementation of the pathway, from the perspective of midwives, doctors and midwifery managers by Jagon (2000).

The clinical pathway concept appeared for the first time at the New England Medical Center (Boston, USA) in 1985 inspired by Zander and Bower. Clinical pathways appeared as a result of the adaptation of the documents used in industrial quality management, the Standard Operating Procedures (SOPs) with a goal of high efficiency in the use of resources and finish at a set of time.

De Luc (2001) has done a study on evaluation of using pathways by using quasi-experimental study of care pathways within British National Health Service Trust. This reports that, a comparison of clinical care administered and patient's satisfaction before (the control group) and after the introduction of the two pathways, the views of staff involved in the development and operations of the pathway. These two clinical

pathways include 12 hospitalized clients and found their level of satisfaction as pre-pathway and pathway implementation. It shows the improvement in the satisfaction of the clients after the pathway implementation.

During the clinical exposure, the researcher has observed the existing nursing practice of the Obstetric clients during their antenatal, intra-natal and postnatal period; the researcher found that the nursing care given was not in the timely manner because of which the mothers faced puerperal complication during their hospital stay. So the researcher was interested in framing the Clinical pathway for postnatal period with timely care to prevent complications.

Need for the Study

Postnatal is the period beginning immediately after the birth of a child and extending for about six weeks. The postnatal period is especially critical for newborns and mothers. Guven the exceptional extent to which the deaths of mothers and babies occur in the first days after birth, the early postnatal period is the ideal time to deliver interventions to improve the health and survival of both the newborn and the mother. American College of Obstetricians and Gynecologists (ACOG) done a study from 1996-2004, noted that among all pregnant women delivered through cesarean and vaginal birth were 29.2% and 29% respectively. Among them term success vaginal birth rates were 74%. In 2009, India's live birth rates are 4,131,019 by both vaginal and cesarean delivery.

The National Vital Statistics report (2007) indicates that the 10-15% women's were affected by postpartum mood disorder, 11% by postpartum depression and 8% by

postpartum hemorrhage. This problem arises due to lack of social support, bodily changes and poor utilization of maternity services. To reduce these postpartum problems among women's should be improved by a quality care and social support. In 1950s, the Critical Path Method was frequently linked with a similar approach, the Program Evaluation and Review Technique, to coordinate multiple contractors or persons in a project by identifying the key sequence of events, or "critical path," the requirements of which would drive the timeline of the overall project.

Critical pathways were first developed and applied to health care in the 1980s, when prospective payment systems focused greater interest on potential methods to improve hospital efficiency. Most of the first critical pathways in hospitals were developed by nurses for nursing care alone but multidisciplinary teams soon began developing pathways to encompass all aspects of care for hospitalized patient. In 1996, The National Library of Medicine introduced the term "critical pathway". Fifteen different entry terms are used in the medical subheading database.

Clinical paths, also known as critical paths, clinical pathways, care paths are management plans that display goals for patients and provide the sequence and timings of actions necessary to achieve these goals with optimal efficiency. It is a method of reducing the variation, decrease resource utilization, and potentially improve healthcare quality.

Pearson, S D.(1995) developed a critical pathway as a strategy for improving care. Queensland Health Clinical Pathways Board definition (2002) developed clinical pathways are standardized, evidenced- based multidisciplinary management plan which

identify an appropriate sequence of clinical interventions, timing frames, milestones and expected outcomes for an homogenous patient group. Ransom (2003) et al developed clinical pathway and implemented in a large multihospital health system, found that the entire country has become more concerned with healthcare costs due to managed care, capitation risk-based contracts, and the near elimination of the cost-plus reimbursement system. In addition to reducing clinical variation and improving clinical quality of care, adherence to clinical pathways might protect clinicians and institutions against malpractice litigation.

In present healthcare scenario, majority of the clients depend on the insurance or their health care benefits from the certified organizations. Many of the hospitals in the Tamilnadu have collaboration with the insurance agencies and providing care through the insurance mode. Need of procedure and timings are the evidences to the insurance agencies to prevent malpractice. Clinical Pathway helps in reducing the variations, improves quality care and protects the clinicians and institutions against malpractice litigation. So the researcher interested in reducing the length of stay by providing care as appropriate to time after delivery, improves the level of satisfaction and maternal outcome by framing Clinical pathway. Here the researcher developed a common clinical pathway for vaginal delivery for cost-effectiveness when they are depends on the insurance mode of paying for their health care.

Statement of the Problem

A Quasi- Experimental Study to Assess the Effectiveness of Clinical Pathway for Postnatal Mothers with Vaginal Delivery upon the Knowledge and Practice of Nurses and Maternal Outcome at Apollo First Med Hospitals, Chennai.

Objectives of the Study

1. To assess the pre and post-test level of knowledge and practice of nurses regarding clinical pathway for postnatal mothers with vaginal delivery.
2. To evaluate the effectiveness of clinical pathway for postnatal mothers upon the knowledge and practice of nurses.
3. To assess and compare the maternal outcome in control and experimental group regarding clinical pathway for postnatal mothers with vaginal delivery.
4. To determine the level of satisfaction upon nursing care in the control and experimental groups of postnatal mothers with vaginal delivery.
5. To determine the association between the selected demographic variables of nurses with their pre and post-test level of knowledge regarding clinical pathway for postnatal mothers with vaginal delivery.
6. To determine the association between the selected demographic variables with maternal outcome and level of satisfaction in control and experimental groups of postnatal mothers with vaginal delivery.
7. To determine the association between the selected obstetric variables with maternal outcome and level of satisfaction in control and experimental groups of postnatal mothers with vaginal delivery.

Operational Definitions

Effectiveness

In this study effectiveness refers to the difference between the pre-test and post-test knowledge and practice scores of control and experimental group of nurses on clinical pathway for postnatal mothers with vaginal delivery.

The effectiveness is also measured through maternal outcome in terms of their length of stay, prevention of complications and satisfaction by comparing the control and experimental group.

Clinical pathway

It is an algorithm developed by the researcher which will be used by the nurse as a guiding tool for providing postnatal care to the mothers from 1 hour to 48 hours after vaginal delivery.

Post-natal mother

Refers to a mother who has given birth to a live baby by normal vaginal and assisted delivery for a period of 48hrs.

Vaginal delivery

Refers to birth of a fetus and delivery of the placenta through the vagina with spontaneous rupture of membranes, full cervical dilatation (10cms) and well forced contractions either through normal or assisted mode using forceps and vacuum.

Knowledge

It refers to the level of understanding and awareness of nurses regarding clinical pathway for postnatal mothers with vaginal delivery as measured by researcher using structured knowledge questionnaire on clinical pathway.

Practice

It refers to nursing care provided by the nurses to postnatal mothers and is measured in terms of compliance with clinical pathway by the researcher by clinical pathway practice checklist.

Nurse

A person who is qualified with ANM, GNM or B.Sc. nursing provides nursing care to the postnatal mothers in the postnatal wards at Apollo First Med Hospitals.

Clinical pathway for postnatal mothers

It includes group of activities developed by the researcher based on the Hedersinberg's 14 basic needs includes immediate assessment, oxygenation, nutrition, elimination, position, rest, comfort, regulatory functions, safety, communication, spiritual, activity, Diversional needs, health teaching & discharge plan to provide nursing care for postnatal mothers with vaginal delivery from 1hr to 48hours following delivery.

Outcome

In this study, it refers to length of stay in the hospital, prevention of complications and the satisfaction of mothers regarding nursing care before and after clinical pathway.

Assumptions

The study assumes that

- The critical pathways are used to minimize the steps of unnecessary interventions to carry out the work with a time set.
- Integrated care pathway will be framed by the team of health care personnel's to provide care for hospitalized clients.
- Nurses are the only personnel who always care and interact most of the time with the hospitalized clients.
- Clinical pathway provides satisfied care, reduces length of stay and has better client's outcome.

Null Hypotheses

Ho_1 There will be no significant difference between pre and post-test level of knowledge and practice of nurses regarding clinical pathway for postnatal mothers with vaginal delivery.

Ho_2 There will be no significant difference in the maternal outcome and level of satisfaction between the control and experimental group of postnatal mothers with vaginal delivery.

Ho_3 There will be no significant association between selected demographic variables with their pre and post-test level of knowledge among nurses regarding clinical pathway for postnatal mothers with vaginal delivery.

Ho_4 There will be no significant association between selected demographic variables with maternal outcome and the level of satisfaction in control and experimental group of postnatal mothers with vaginal delivery.

Ho_5 There will be no significant association between selected obstetric variables with maternal outcome and the level of satisfaction in control and experimental group of postnatal mothers with vaginal delivery.

Delimitations

The study was limited to the nurses who are

- working at Apollo First Med Hospitals, Chennai.
- working in Postnatal ward
- willing to participate in the study.
- able to understand English

The study was limited to the mothers who are

- admitted in the Apollo First Med Hospitals
- underwent normal & assisted vaginal delivery
- willing to participate
- able to understand English

Conceptual Framework

A framework is a group of concepts and a set of propositions that spell out the relationship between them. Their overall purpose is to make scientific findings meaningful and generalized (Polit and Hungler 2007).

The conceptual study for a particular study is the abstract logical structure that enables the researcher to link the findings to nursing body of knowledge. The model gives the direction for planning research design, data collection and interpretation of findings. A conceptual framework deals with interested concepts on abstractions that are assembled together in some rational scheme by virtue of their relevance to a common theme.

(Polit and Hungler 2007)

The researcher adopted Jean Ball Deck Chair Theory (1987) based on the needs of women and the consequences of women for different actions of maternity services in an organization. Jean Ball Deck Chair Theory is used as a conceptual framework to describe the relationship and focus of study. It includes 3 elements of the deck chair as follows,

- The base of the chair is formed by the maternity services resting on the views of the society regarding families.
- The side-strut of the chair is woman's personality, life experiences and so on. The central strut her family and support system.
- The seat of the chair is the woman's maternal well-being.

Base:

The base of the chair forms the maternity services resting on the views of society regarding families. The maternity service includes the entire antenatal, intra-natal and postnatal care provides to less dependent to more dependent mothers. With the professional team, here the researcher framed a new care interventions named it as Clinical pathway consists of needs of the mother based on the Hedersinberg's theory. It fulfills the basic needs of the mother with support of their partner and family members. Basic needs are as follows as Immediate care, Oxygenation, Psychological support, Vital signs, Elimination, Nutrition, Lochia, Safety measures, Personal hygiene, Position, Comfort, Regulatory functions, Communication, Spiritual, Activity, Diversional needs, Health teaching and Discharge plan. The researcher framed the basic needs and evaluates the maternal satisfaction and their outcome with the timely framed actions.

Side – strut:

The side-strut of the chair is the woman's personality, life experiences and so on. The mother's personality includes introvert and extrovert has their different behavior and emotional responses. The central strut her family and support system. The emotional responses of the women to the changes which follow the birth of a child will be affected by their personality and the quality of support they receive from family and

social support systems. Life experiences of the mother may be obtained from their own previous experience if she is a multi gravida, either from their sisters, neighbors or from their family members. The personality, experiences and the life crises which make the different in the level of satisfaction and maternal outcomes, so the researcher identifies these factors and providing care based on the needs of the mother.

Seat:

The seat of the chair is the woman's maternal well-being which includes the medical, surgical and gynecological health. If the mother is free from health problems, or having problems previously or may exists during pregnancy will change the outcome of the mother and their level of satisfaction. To identify the maternal health, the researcher identifies the variables which deviate the level of satisfaction and the maternal outcome.

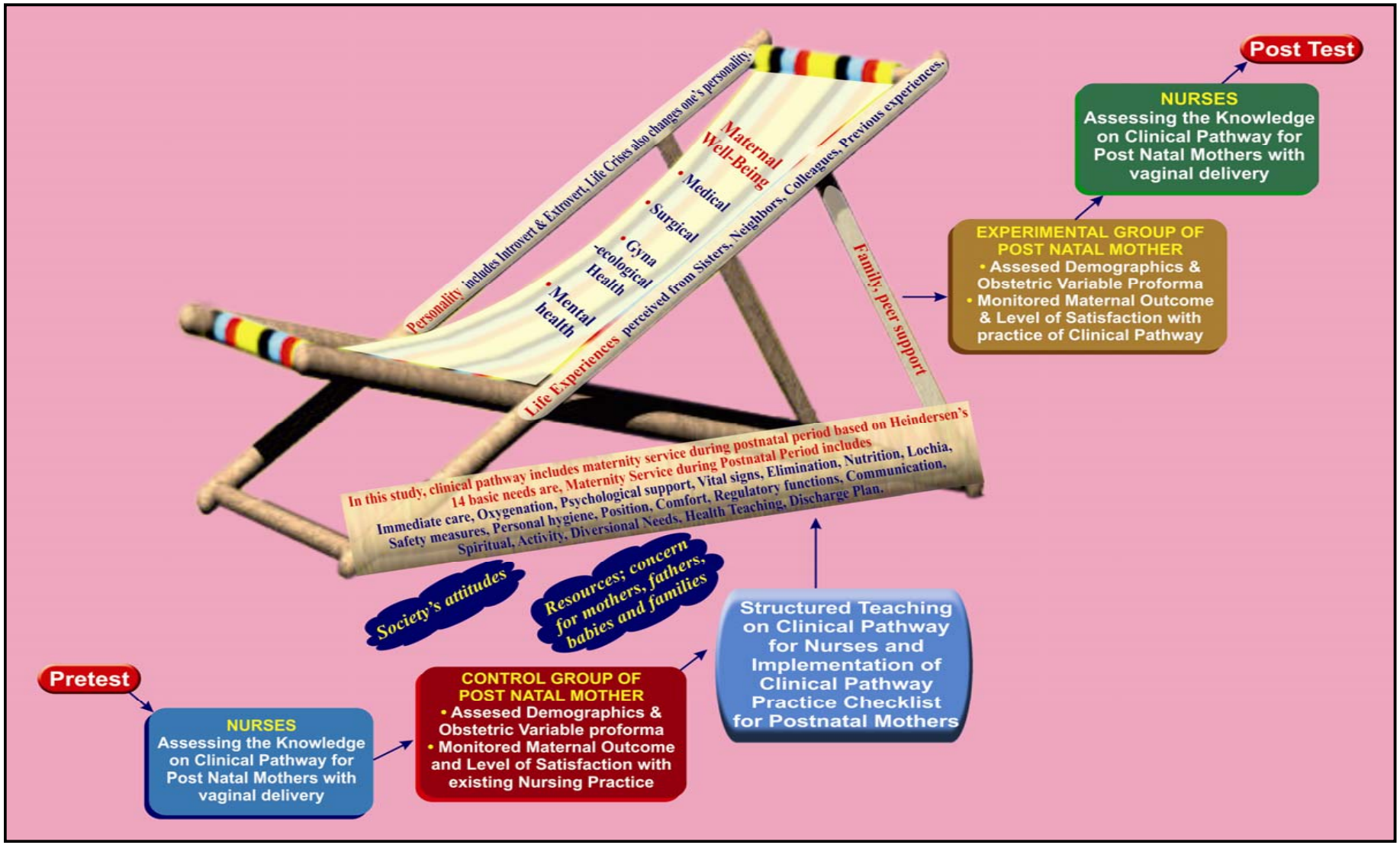


Fig. 1. Conceptual Framework based on Jean Ball Deck Chair Theory (1987)

Projected Outcome

This study will useful to enhance the level of knowledge among the nurses on clinical pathway and their practice and improves in the level of satisfaction and the maternal outcome of postnatal mothers with vaginal delivery.

Summary

This chapter dealt with the background of the study, the need for the study, statement of the problem, objectives, assumptions, operational definitions, null hypotheses and delimitations and conceptual framework of the study.

Organization of the Report

Further aspects of the study are presented in the following chapters.

Chapter II consists of review of literature

Chapter III consists of research methodology which includes research approach, research design, setting, population, sample, sampling technique, tools used in the study, data collection procedure and plan for data analysis.

Chapter IV deals with analysis and interpretation of data done through descriptive and inferential statistics.

Chapter V comprises of Discussion

Chapter VI consists of summary, conclusion, implications, recommendations and limitations.

Chapter II

Review of literature

CHAPTER II

REVIEW OF LITERATURE

A literature review is an organized written presentation of what has been published on a topic by scholars (Burns & Groove, 2004).

This chapter deals with a review of published and unpublished research studies and from related material for the present study. The review helped the researcher to develop an insight into problem area. This helped the researcher in building the foundation of the study.

The review of literature in this chapter has been presented under the following heading:

- Literature related to postnatal care
- Literature related to clinical pathway
- Literature related to effectiveness clinical pathway for postnatal mothers

Literature related to postnatal care

Hishamshah (2011) conducted a descriptive cross sectional study among 68 women residents of a Malaysian village who had given live births. The baseline demographic data and related information was collected on the postpartum confinement period and the aspects of traditional postpartum care. Most respondents practice the confinement period due to self-belief (86.8%), others due to convenience (4.4%) and family pressure (4.4%). Older women were more likely to consume or use traditional herbs (χ^2 = 9.468, 4, P = 0.050) and to restrict their water intake (χ^2 = 18.827, P < 0.001). Most of them claimed that they would repeat the same traditional postpartum

care regimens in their subsequent pregnancies and would advise their children the importance of doing so despite the presence of complications. This study revealed a high awareness and practice of traditional postpartum care.

To explore the delivery mode on women's postpartum quality of life in rural china and influencing the postnatal quality of life, A Cross-sectional study was conducted among the women residing in rural areas. Total of 30 rural women's were selected includes both the normal delivery and cesarean section. A structured questionnaire was used to evaluate women's socio-demographic characteristics, previous pregnant experiences, fetal characteristics and use of maternal health services. The scale for rural postnatal quality of life was adopted to assess postnatal quality of life from six dimensions: physical complaints and pain, sleep and energy, sex satisfaction, interpersonal communication, self-evaluated living stress and perceived life satisfaction. It was found that the delivery mode does not affect the postpartum quality of life in rural china, whereas socio-cultural determinants may have influence in postnatal quality of life Huang et al (2011).

In 2009 Yelland et al conducted a study to assess women's views about their care during the postnatal stay at 3 maternity teaching hospitals in Melbourne, Australia and personally at home. About 63 women's were included in this study and Interviews were conducted with mothers 6–9 months after birth, by three bilingual interviewers. Overall satisfaction with care was low, and one in three women left hospital feeling that they required more support and assistance with both baby care and their own personal needs. The method of baby feeding varied between the groups, with women giving some insight into the reason for their choice. The majority of comments women made

regarding their postnatal stay focused on the attitude and behavior of staff and about routine aspects of care.

A prospective study was conducted at Iran by Torkan et al. (2009) surveyed 100 postnatal women through interview 50 with normal delivery and 50 with caesarean section. Postnatal quality of life in both groups was improved from time1 (6-8 weeks following delivery to time 2 (12-14 weeks of delivery). However, comparing the mean scores between the normal and caesarean delivery groups the results showed that in general the normal vaginal delivery group improved more on physical health related quality of life for almost all subscales in both assessment times, whereas the caesarean section group improved more on mental health related quality of life.

At Ministry of Health providing Mother and Child Health Care in West Bank, Palestine, Dhaher et al. (2006) conducted cross-sectional at three clinics. A total of 264 postpartum women attending the clinics were interviewed face-to-face, using a structured questionnaire. Although the majority of women considered postnatal care necessary (66.1%), only 36.6% of women obtained postnatal care. The most frequent reason for not obtaining postnatal care was that women did not feel sick and therefore did not need postnatal care (85%), followed by not having been told by their doctor to come back for postnatal care (15.5%). Based on a multivariable analysis, use of postnatal care was higher among women who had experienced problems during their delivery, had a caesarean section, or had an instrumental vaginal delivery than among women who had a spontaneous vaginal delivery.

Literature related to clinical pathway

A study conducted by Verdu et al. (2008) on designing clinical pathway, implemented and assessed lower-extremity deep venous thrombosis, and to compare the

length of hospital stay in two different periods. The mean length of hospital stay was 6.78 days in 2002 and 4.72 days in 2004. This means a reduction of 2.06 days ($p<0.012$). The impact of the clinical pathway was assessed using the following indicators - implementation indicator 92.2%, compliance indicator 65%, adverse events indicator 2.5% and satisfaction indicator 67%. In comparison with costs incurred in year 2002, implementation of the clinical pathway resulted in a saving of €427.33 per patient and a total saving of €17 093.20. The implementation of a lower-extremity DVT clinical pathway in our institution has help to reduce hospitalization costs, due to a decreased length of hospital stay.

A prospective study was used to determine the effect of implementation of clinical pathway, using evidence- based clinical practice guidelines for the emergency care of children's and adolescents with asthma. In 2006, Norton assessed with 267 patients with age group of 1-18years. Data were collected for identical 2 month periods before and after implementation of the clinical pathway to determine he hospitalization rate and other outcomes for 2 weeks after emergency visits, the rate at which patients returned to emergency care for worsening asthma was evaluated. It has proven that an evidence-based clinical pathway for children and adolescents with moderate to severe exacerbations of acute asthma markedly decreases their rate of hospitalization without increased return to emergency care.

The effectiveness of anesthesiological module of a clinical pathway undergoing laparoscopic prostatectomy study was conducted by Braun et al.(2005) includes randomly selected 40 patients of 2 groups receiving either total intravenous anesthesia (TIVA) using propofol/ remifentanil or balanced minimal flow anesthesia using desflurane/ remifentanil. During this module the indicators of quality such as vigilance, pain, post-operative nausea and vomiting and mobilization were measured. Finally he

found that the there were no anesthesia-related deviations from clinical pathway and optimizing anesthesiological procedures could lead to a continuous improvement in the quality of therapeutic pathways.

An evaluation study to assess the consistency of criteria for an integrated care pathway for total hip replacement conducted by Douglas This study seeks to highlight that integrated care pathways (ICPs), advocated as a tool to improve patient care and reduce variation in practice, fail to achieve the desired outcome. An evaluation tool was developed based on relevant literature, and 27 pathways from different trusts were reviewed using this tool. Each ICP was evaluated against four themed headings -Quality of care, Multi-professional working; Patient involvement, and Variation in clinical practice. The evaluation demonstrated that ICPs are in themselves as varied as patient care, and not all they are purported to be evaluated by the Douglas (2002).

The overuse of antibiotic for the children's admitted with Bronchiolitis is widely reduced in the use of pathway group than the non-pathway group. It was found by Wilson., Dahl & Wells., in the year 2002 at Children's, California. Among 181 children's admitted in Children's hospital were reviewed to determine whether antibiotic use was reduced in patients managed using a clinical pathway compared with a matched group of patients managed without use of the pathway. Only 9% of the pathway patients received antibiotics compared with 27% of the non-pathway group. Overall, the study suggests that implementation of a clinical pathway may be an effective means to change physician practice; cost and length of stay were significantly reduced and also reduced the unnecessary use of antibiotics.

Pearson (2001) done a study to found the effectiveness of clinical pathways interventions to reduce the length of hospital stay among 6,796 patients undergo one of

the following procedures during the study. The percentage of eligible patients managed on a critical pathway ranged from 94% for hysterectomy to 26% for colectomy. For most procedures, the postoperative length of stay was decreasing during the baseline period. After pathway implementation, the length of stay decreased 21% for total knee replacement, 9% for CABG surgery, 7% for thoracic surgery, 5% for hysterectomy, and 3% for colectomy (all P <0.01). However, similar decreases were seen in the neighboring hospitals that did not have critical pathways or other specific efficiency initiatives. Critical pathways were associated with a rapid reduction in postoperative length of stay after all five study procedures.

The qualitative study set out to discover a multidisciplinary team's impressions of an integrated care pathway pilot and Data were collected through semi-structured interviews with the view of the team's experiences, beliefs and perceptions. Four categories emerged, which focused on the clinical impact of the pathway, team performance, pathway effectiveness, and practice development. Benefits identified by the team were the pathway's influence on managing care, increased efficiency, and better team working and perceived positive impact on the experience of patient and care giver. Particular new insights focused on the pathway's impact on professional roles and responsibilities. This study was conducted at east part of England by Hall (2001).

In 2004 Carol Ramos conducted study on the development and implementation of an integrated multidisciplinary clinical pathway. In this the Clinical pathways, linear time-related representations of patient care processes, are widely encouraged as a mechanism to outline efficient, cost-effective, multidisciplinary care. The translation of pathways from concept to reality is, however, predictably difficult. All caregivers are dedicated to a common goal, but organizational, personal, and professional perspectives

are barriers to development of a common tool. Moreover, the building process requires the discovery, articulation, and communication of previously tacit patient care processes.

Kitchiner et al. conducted a study with effective tools of Integrated Care Pathways in 1996 for continuous evaluation of clinical practice with a set time-scale. A pathway reflects the activities of a multidisciplinary team and can incorporate established guidelines and evidence-based medicine. The pathway forms part of the clinical record of every patient which is unique to all institutions. Integrated Care Pathways provide a powerful audit tool, as all aspects of the process and outcome of clinical practice can be constantly monitored. Variations documented and analyzed with set standards are minimized, and improvements are rapidly incorporated into routine practice and subsequently re-evaluated.

Literature related to effectiveness of clinical pathway on postnatal mother

In Australia, Sarah (2011) assessed the quality and safety of a postnatal discharge system used for remote dwelling Aboriginal mothers and Infants in the top end of Australia. The objective of the study was to examine the transition of care in the postnatal period from a regional hospital to a remote health services and describe the quality and safety implications for the mothers and infants. In this study, retrospective cohort study was used and data were collected through interview and participant observations in the hospitals and two remote health centres. It has been found that there is poor documentation, communication and co-ordination between the hospital and remote health centre staffs occurred and made the risk in discharging the mother and the infants.

An experimental study conducted by Wanyonyi et al. (2010) about the utility of clinical care pathways in determining perinatal outcomes for women with one previous caesarean section; a retrospective service evaluation. A retrospective service evaluation by review of delivery case notes and records was undertaken at the Aga Khan University Hospital, Nairobi, Kenya between January 2008 and December 2009.A total of 215 women with one previous caesarean section were followed up using a standard care pathway. The median parity (minimum-maximum) was 1.0. The other demographic characteristics were comparable. Only 44.6% of eligible mothers opted to have a Totality of Satisfaction.

Debra et al. (2009) conducted case study design for the Observations of four women during labour. Eighteen interviews were conducted with clinicians and women, including the women whose care was observed and the midwives who cared for them, senior midwifery managers and obstetricians. The implementation of the pathway resulted in a number of anticipated benefits, including increased midwifery confidence in skills to support normal birth and promotion of team working. There were also unintended consequences, including concerns about a lack of documentation of labour care and negative impact on working relationships with obstetric and other midwifery colleagues. Women were unaware their care was informed by a care pathway.

At Victoria Public hospital in Australia, McLachlan et al. (2008) conducted a study among the providers of postnatal care. There is significant diversity across Victoria in the way postnatal units are structured and organized and in the way care is provided. There are differences in numerous practices, including maternal and neonatal observations and the length of time women spend in hospital after giving birth. Current structures such as standard postnatal documentation (clinical pathways) and fixed length

of stay may inhibit rather than support individualized care for women after childbirth. There is a need to move towards greater flexibility in providing of early postnatal care, including alternative models of service delivery; choice and flexibility in the length of stay after birth, a focus on the individual with far less emphasis on care being structured around organizational requirements; and building an evidence base to guide care.

In 2006 Houston et al. views a study about the outcome management in maternal health. Outcomes management uses a quality and research approach to reducing costs in health care. Populations may be targeted for high volumes or their potential for cost savings. A principle related to outcomes management includes questioning practice, administrative and physician involvement recognizing that change is necessary; accepting uncontrollable factors and valuing the outcomes management process. Resources necessary for managing outcomes include the use of collaborative practice teams, outcomes assessment, information systems, and educational support services. The women's health population can benefit from an outcomes management effort by improving and standardizing care for mothers and infants across the continuum.

At Tertiary level perinatal Centre (2006), Weiss et al. conducted an experimental study to assess the psychometric properties of a scale measuring mother’s perceptions of readiness for discharge after birth. Data were collected at discharge and 6 weeks post discharge conducted in the Midwestern United States among 1,462 postpartum mothers without the interventions Perceiving Readiness for Discharge after Birth Scale scores; subscale scores for personal status and knowledge factors. The Perceived Readiness for Discharge after Birth Scale performed well in psychometric testing. Assessing mother’s perceptions of readiness for discharge is important for measuring outcomes of hospitalization and for identifying mothers at risk for post discharge problems.

Implementation of Care pathways for an evaluation of their effectiveness conducted by De Luc (2000) through quasi-experimental case study of two care pathways - a midwifery-led maternity pathway and a breast disease pathway developed within one British National Health Service Trust. Of these pathways comparison made between the clinical care and the satisfaction before and after the implementation. Patient satisfaction levels showed little overall change - only 15% of the questions for breast disease and 9% for maternity showed any statistically significant change. However, both surveys indicated precise areas where a change resulting from the introduction of the pathway could be linked to an increase in satisfaction.

Developing the clinical pathway has become one way to reduce unnecessary resources consumption by reducing provider variance, improving clinical outcomes and reducing cost. These findings were concluded by Ransom et al. (1998) for the development and implementation of vaginal delivery using clinical pathways in a large multi-hospital health system. The entire USA has become concerned with healthcare costs due to managed care, capitation risk-based contracts and near elimination of the cost plus reimbursement system.

Summary

This chapter has dealt with review of literature related to the problem stated. The literatures presented here were extracted from 22 primary and 3 secondary sources. It has helped the researcher to design the study, develop the tool and plan the data collection procedure and to analyze the data.

Chapter III

Research Methodology

CHAPTER III

RESEARCH METHODOLOGY

Polit & Beck (2010) says that Research methodology means how the studies are investigating through the ways of obtaining and organizing data and conducting rigorous research. This chapter deals with the methodology adopted by the researcher for the study includes research approach, research design, the setting, population, sample and Sampling techniques, development and description tool, validity, reliability, pilot study, data collection procedure, plan for data analysis.

Research Approach

According to Polit and Beck (2010) evaluative research approach is an extremely applied form of research and involves finding out how well a programme, the practice or policy is working. An evaluative research approach is generally applied where the primary objective is to determine the extent to which a given procedure meets the desired result. Its goal is to evaluate the success of the programme. In this study, the investigator wants to assess the knowledge of nurses about clinical pathway; the evaluative research approach seemed to be the most appropriate approach.

Research Design

The Research design is the overall plan for obtaining answers to the questions being studied and for handling some of the difficulties encountered during the research process (Polit & Beck 2010). A one group pre-test and post-test, which is Quasi-experimental in nature, was adopted for conducting the study. In this study, the investigator administered pre-test for the selected nurses and the investigator manipulated the independent variables i.e. structured teaching and implementation of

clinical pathway checklist practice checklist for the same group of nurses and the post test was conducted. The postnatal mothers were selected and assessed for existing nursing practice. After the structured teaching, the other groups of postnatal mothers were assessed with clinical pathway practice without randomization in the mothers.

The research designs are represented diagrammatically as follows:

For Nurses

$$\mathbf{O_1 \quad X \quad O_2}$$

O_1 --- Pre-test to assess the knowledge of nurses regarding clinical pathway on postnatal mothers with vaginal delivery.

X --- Structured teaching on clinical pathway for postnatal mothers with vaginal delivery.

O_2 --- Post-test to assess the gained knowledge of nurses regarding clinical pathway on postnatal mothers with vaginal delivery.

For Postnatal mothers

$$\mathbf{- \quad O_1}$$

$$\mathbf{X \quad O_1}$$

X --- Implementation of clinical pathway for the postnatal mothers with vaginal delivery.

O_1 --- Observation of level of satisfaction and the maternal outcome for the postnatal mothers with vaginal delivery.

Variables of the Study

Independent variables

The variable is believed to cause or influence the dependent variable is the independent variable (Polit & Beck 2008). The independent variable in this study was the clinical pathway for the postnatal mothers with vaginal delivery (Developed by the researcher).

Dependent variables

The variable hypothesized to depend on or be caused by another variable is the dependent variable (Polit & Beck 2008). The dependent variables in this study were knowledge and practice of nurses and outcome of the postnatal mothers (Developed by the researcher).

Extraneous variables

A variable that confounds the relationship between the independent and dependent variables that needs to be controlled either in the research design or through statistical procedures (Polit & Beck 2008). Demographic and Obstetric variables are the extraneous variables in this study (Developed by the researcher).

Research Setting of the Study

Research setting is the specific places where the information's is gathered in one or more sites (Polit & Beck 2010)**.**

The study was conducted at Apollo First Med Hospitals in the postnatal wards A, D, E, H & I. The hospital is 120 bedded with average census of 40- 60 normal delivery per month. There are 3 waiting rooms for the client who are in active phase of

labour and the labour room consists of CTG machine, 2 labour cots, emergency drug tray; radiant warmer with emergency resuscitation kit, sterile delivery kit, instruments needed for assisted vaginal delivery includes Forceps, Vacuum machine, Kiwi kit and all sterile articles needed for conduction of labour. Postnatal ward is facilitated with all emergency drugs, sterile articles, bed-side warmer, cradle, bed side phototherapy cradle and 24hrs consultant is available. They give health teaching regarding postnatal care, newborn care, importance of breast feeding and immunization.

Population

According to Polit and Beck (2010), Population is the entire set of individuals or objects having some common characteristics. The **Target population** is the entire population in which a researcher is interested and to which he or she would like to generalize the study results in this study. The **Accessible population** is the list of population that the researcher finds in study area.

Target population

Population of this study includes

- Nurses who takes care of post-natal mothers
- Post-natal mothers

Accessible population

The accessible populations in this study were nurses in the wards like A, D, E, H & I and the postnatal mothers in Apollo First Med Hospitals, Chennai.

Sample and Sample size

A sample consists of a sub-set of the units which comprises the population (Polit and Beck 2010). Sample size of this study will be 40 nurses and 60 post-natal mothers.

Sampling technique

In this study, the researcher adopted purposive sampling techniques. Purposive sampling is a non-probability sampling method in which the researcher selects participants based on personal judgments about which ones will be most informative, also called as judgmental sampling (Polit & Beck 2010).

Inclusion criteria

For mothers

- had normal and assisted vaginal delivery
- admitted in the Apollo First Med Hospitals
- had co-morbidity before and during pregnancy
- had developed complications within 24 hours following delivery
- willing to participate in the study
- able to read and write English

For nurses

- working in the Postnatal wards like A, D, E, H & I at Apollo First Med Hospitals
- available at the time of data collection
- able to read and write English

Exclusion criteria

For mothers

- had caesarean delivery
- not able to read and speak English

For nurses

- not available during data collection period
- not handling postnatal mothers

Selection and Development of the Study Instruments

As the study aimed to evaluate the effectiveness of clinical pathway for postnatal mothers with vaginal delivery, the data collection instruments were developed through an extensive review of literature. The instruments used in this study were demographic variable proforma, obstetrical variable proforma, knowledge assessment questionnaire, clinical pathway practice checklist, complication assessment rating scale and satisfaction rating scale (Developed by the researcher).

Demographic variable proforma for nurses

Demographic variable proforma for nurses includes age, religion, educational status, marital status, type of family, type of residential, years of experience, income per month and previous information regarding Clinical pathway other than researcher.

Demographic variable proforma for postnatal mothers

Demographic variable proforma for postnatal mothers consisted of age in years, religion, education, occupation, and age at marriage in years, type of the family and income of the family.

Obstetrical variables proforma for postnatal mothers

Obstetrical variable proforma for postnatal mothers includes gestational weeks at the time of delivery, number of antenatal visits, order of pregnancy, type of co-morbidity, mode of delivery, complications during pregnancy and types of complications.

Development of Clinical Pathway

Henderson identified 14 basic needs of the patient, which comprise the components of nursing care. These include the following needs.

1. Breathe normally
2. Eat and drink adequately
3. Eliminate body wastes
4. Move and maintain desirable postures
5. Sleep and rest
6. Select suitable clothes- dress and undress
7. Maintain body temperature within normal range by adjusting clothing and modifying the environment
8. Keep the body clean and well groomed and protect the integument
9. Avoid dangers in the environment and avoid injuring others
10. Communicate with others in expressing emotions, needs, fears or opinions
11. Worship according to one's faith
12. Work in such a way that there is a sense of accomplishment
13. Play or participate in various forms of recreation
14. Learn, discover or satisfy the curiosity that leads to normal development and health and use the available health facilities

Clinical pathway was prepared for postnatal mother's based on Henderson's theory fulfilling 14 basic needs. It included immediate assessment, oxygenation, nutrition, elimination, position, sleep and rest, mobility and comfort, regulatory function, personal hygiene, communication, activity, safety, spiritual needs, Diversional needs, health teaching, and discharge plan. The staff nurse instructed to follow the clinical pathway for the postnatal mothers to providing care from 1 hour to 48 hours following vaginal delivery. The prepared clinical pathway was validated by the experts in the field of obstetrics and gynecology for establishing content validity. The content was modified according to the expert advice.

Structured questionnaire on knowledge of nurses regarding clinical pathway for postnatal mothers with vaginal delivery

The structured questionnaire was framed very carefully, considering the language, clarity, organization, and sequence of items. The questions framed and the choices are given below. It includes 25 multiple choice questions on knowledge regarding clinical pathway, immediate and late postnatal care, newborn care and health education. The nurses are free to answer the questions which have one right answer. Every right answer was assigned a score of '1' and wrong answers a score of '0'. The total score of structured questionnaire was 25. The knowledge scores were classified into 3 levels,

Scores	**Percentage**	**Interpretation**
12.5	≤50%	Inadequate knowledge
12.6-18.75	51-75%	Moderately adequate knowledge
18.76-25	≥ 76%	Adequate knowledge

Clinical pathway practice checklist

It includes immediate assessment, regulatory functions, oxygenation, nutrition, nature of lochia, involution of uterus, elimination, position, rest, comfort, personal hygiene, communication, activity, safety, Diversional needs, health teaching and discharge plan with ranging from compliance to non-compliance.

Scores	**Percentage**	**Interpretation**
125	≤50%	Non-Compliant
125.01-187.5	51-75%	Partially compliant
187.51 -250	≥ 76%	Compliant

Satisfaction rating scale

It includes environment, comfort, nursing care, nutrition, elimination needs, activity, rest, position, personal hygiene, safety, spiritual need, communication, family health education, discharge plan given scores with ranging from low to highly satisfaction.

Scores	**Percentage**	**Interpretation**
10	≤50%	Low satisfaction
11-15	51-75%	Moderately satisfaction
16-20	≥ 76%	Highly satisfaction

Rating scale on maternal outcome

It includes regulatory functions, oxygenation, nutrition, nature of lochia, involution of uterus, elimination, rest, comfort, position, personal hygiene, communication, activity, Diversional needs, safety health teaching and discharge plan with ranging from No complication to major complications.

Scores	Percentage	Interpretation
14	≤50%	Major complication
14.01-21	51-75%	Minor complication
21.01-28	≥ 76%	No complication

Psychometric Properties of the Instruments

Validity

Content validity of the tool was obtained by getting opinion from seven experts in the field of Obstetrics and Gynecology. The Validators had suggested some specific modification in the clinical pathway checklist and rating scale. The modification and suggestions of experts were incorporated in the final preparation of the structured knowledge questionnaire for nurses regarding clinical pathway of postnatal mothers with vaginal delivery, clinical pathway practice rating scale, rating scale to assess the level of satisfaction of postnatal mothers and their outcome was formulated.

Prepared knowledge questionnaires, Observational checklist and clinical pathway tool was given for validation to the experts in the field of research and nursing. Based on the opinion given by the experts, tools were modified.

Reliability

Reliability is the degree of consistence or dependability with which an instrument measures an attribute (Polit 2010). The reliability was found using Pearson's correlation formula.

Structured knowledge questionnaire for nurses – 0.87 (test-retest method)

Rating scale on satisfaction of postnatal mothers – 0.95 (test-retest method)

Practice checklist for clinical pathway – 0.87 (inter rater technique)

Rating scale on Maternal Outcome – 0.85 (test-retest method)

Pilot Study

Polit and Beck (2010) stated that a pilot study is a miniature version of actual study in which the instruments are administered to the subjects drawn from the same population. The purpose is to find out the feasibility and practicability of the tool, then the tool was modified. The structured knowledge questionnaire and clinical pathway were administered and found to be feasible, so the clinical pathway was found to be feasible.

Pilot study was conducted at Mangalam hospital with

- 5 nurses for whom pre-test and post- test was done.
- 10 postnatal mothers out of which 5 in control and 5 in experimental groups.

Protection of Human Rights

- The study was conducted after obtaining approval from Ethical committee, Apollo hospitals, Chennai.
- Obtained permission from Dr. Latha Venkatesan, Principal of Apollo college of Nursing, HOD of Obstetric and Gynaecological Nursing and Mr.Krishna kumar, Medical superintendent of Apollo First Med Hospitals.
- Consent was obtained from all the participants before the data collection.
- Confidentiality was maintained throughout the study

Data collection procedure

Data collection procedure is gathering of information and needed to address a research problem. The researcher got permission from Medical superintendent at Apollo First Med Hospitals to conduct the study in their institution after the ethical committee clearance. The researcher collected the data by participatory observation technique, records and from the staff nurses. The daily observation time schedule was 12 hours of nursing practice from 7am-7pm. The data collection period was from June 17th to July 17th 2011. The postnatal mothers were assessed from 1 hour to 48 hours of following delivery.

The researcher approached nurses in all the postnatal wards like A, D, E, H & I and selected 40 nurses by purposive sampling technique and obtained verbal consent for the study. Maintained rapport and explained about the aims of research to the nurses which are going to be conducted for the postnatal mothers with vaginal delivery. During their shift changing time from (2-3pm) the nurses were gathered in the nurses station and collected the base line data. Their pre-test knowledge level was assessed by using structured knowledge questionnaire. Thirty postnatal mothers with vaginal delivery were selected by using purposive sampling method. The mother was selected from 1 hour following vaginal delivery. The baseline data was collected by using demographic variable and obstetric variable proforma after obtained their written consent. Observed the existing nursing practice by participatory observation method. Maternal outcome was monitored by using outcome rating scale and at the time of discharge rating scale on satisfaction of nursing care was distributed and their level of satisfaction was assessed.

The same group of nurses was then educated for one hour over a period of one week about the clinical pathway for postnatal mothers by using the pathway tool and the doubts of nurses were cleared. Implemented the clinical pathway and instructed he nurses to practice. After one week, the investigator assessed the post-test knowledge level of same group of nurses. Nursing care of the postnatal mother was assessed by using practice checklist upon the nurses by participatory observation method, records and through verbal report of nurses. Maternal outcome was monitored by using rating scale. At the time of discharge rating scale on satisfaction of nursing care was distributed and their level of satisfaction was assessed.

Problems faced during of the data collection

- Some of the nurses are not available to conduct pre and post-test
- Shift changes and long leave of the nurses were affecting the clinical pathway implementation.
- Lack of time for the nurses to the questionnaire
- Some of the nurses are not interested to fill the questionnaire.

Plan for data analysis

Data analysis is the systematic organization and synthesis of research data and testing of null hypothesis by using the obtained data (Polit & Beck 2010). Analysis and interpretation were carried out with descriptive and inferential statistics.

Descriptive statistics includes mean, median, frequency, standard deviation and percentage were used to describe the demographic variables of nurses and mothers, obstetrical variables for mothers, knowledge questionnaire for nurses on clinical

pathway and to assess the level of satisfaction and maternal outcome of the postnatal mothers with normal vaginal delivery.

Inferential statistics like independent & paired‘t’-test. Independent‘t’- test was used to analyse the difference in knowledge level of the nurses in the pre and post-test and the maternal outcome between the experimental and control group. Paired‘t’-test were used to analyse the association between the demographic and the maternal outcome and level of satisfaction, association between the obstetric variables and the maternal outcome and level of satisfaction.

Summary

This chapter dealt with the selection of research approach, research design, setting, sample, sampling technique, sampling criteria, selection and development of study instruments, validity and reliability of study instruments, pilot study, data collection procedure and plan for data analysis. The following chapters with analysis and interpretation of data using descriptive and inferential statistics.

Chapter IV

Analysis and Interpretation

CHAPTER IV

ANALYSIS AND INTERPRETATION

This chapter deals with the methods of obtaining and analyzing figures or data in order to take decision. Chapter includes both descriptive and inferential statistical analysis of data. According to Croxton and Gowden (2008), statistics is the collection, preservation, analysis and interpretation of numerical data. The data was collected from the 40 nurses as pre & post-test regarding knowledge questionnaire on clinical pathway for postnatal mothers with vaginal delivery, 60 normal postnatal mothers with vaginal delivery – 30 in control and 30 in experimental group by using clinical pathway practice checklist.

The data includes knowledge questionnaire for nurses, level of satisfaction rating scale, maternal outcome rating scale and the clinical pathway practice checklist. Once the master coding sheet was prepared, the data were analyzed. The researcher has used descriptive and inferential statistics for analyzing the data.

Organization of findings

- Frequency and percentage distribution of demographic variables of nurses, their level of knowledge and their practice scores.
- Frequency and percentage distribution of demographic variables, obstetrical variables of postnatal mothers, their level of satisfaction and maternal outcome.
- Comparison of mean and standard deviation of level of knowledge and practice scores of nurses.
- Comparison and standard deviation of level of satisfaction and maternal outcome for postnatal mothers with vaginal delivery.

- Association between the selected demographic variables with the pre & post-test level of knowledge for nurses.
- Association between the selected demographic variables, obstetric variables with their level of satisfaction and the maternal outcome of control and experimental group of postnatal mothers with vaginal delivery.

Table 1

Frequency and Percentage Distribution of Demographic Variables of Nurses in the Pre and Post Test (Age, Religion, Educational Status, Marital Status, Year of Experience, Type of Residence, Income per month and Previous information regarding Clinical Pathway)

(N=40)

Demographic Variables	f	p
Age (in years)		
21-24	31	77.5
25-28	7	17.5
29-32	-	-
>32	2	5
Religion		
Hindu	18	45
Muslim	-	-
Christian	22	55
Others	-	-
Educational qualification		
ANM	-	-
Diploma in nursing	24	60
B.Sc nursing	16	40
Post certificate	-	-
Marital status		
Married	4	10
Single	36	90

Demographic Variables	f	p
Type of residence		
Home	10	25
Hostel	30	75
Years of experience		
≤1	12	30
2	10	25
3	-	-
≥4	18	45
Income per month		
≤Rs.5000	11	27.5
Rs.5001- Rs.7500	22	55
Rs.7501-Rs.10000	7	17.5
≥Rs.10001	-	-
Previous information regarding clinical pathway		
Yes	9	22.5
No	31	77.5
Source of Information		
Books	5	12.5
Colleagues	4	10.0

The data presented in the table 1 shows that majority of the nurses were single (90%), between the age of 21-24 years (77.5%) and had no previous information about clinical pathway (77.5%). Most of the nurses are having educational status of Diploma in nursing (60%), with income of about Rs.5001-Rs.7500 (55%), belongs to the religion of Christians (55%). The significant no of years of experience of nurses are more than 4 years of experience (45%).

Table 2

Frequency and Percentage Distribution of Demographic Variables in the Control and Experimental Group of Postnatal Mothers with Vaginal Delivery (Age, Religion, Education, Occupation, Age at Marriage, Type of Family and Income of the Family).

Sample Characteristics	Control group (n=30)		Experimental group (n=30)	
	f	p	f	p
Age (in years)				
≤20	-	-	-	-
21-25	14	46.7	12	40
26-30	12	40	12	40
≥30	4	13.3	6	20
Religion				
Hindu	23	76.7	19	63.3
Muslims	3	10	2	6.7
Christians	4	13.3	3	10
Others	-	-	6	20
Educational qualification				
Primary	-	-	-	-
Secondary	7	23.3	2	6.7
Graduate	21	70	14	46.7
Post graduate	2	6.7	14	46.7
No formal education	-	-	-	-
Occupation				
Working	18	60	11	36.7

Sample Characteristics	Control Group (n=30)		Experimental group (n=30)	
	f	p	f	p
Not working	12	40	19	63.3
Age at marriage				
≤20	4	13.3	3	10
21-25	19	63.3	14	46.7
26-30	7	23.3	13	43.3
≥30	-	-	-	-
Type of family				
Nuclear	5	16.7	8	26.7
Joint	25	83.3	22	73.3
Income per month				
≤Rs.5,000	-	-	-	-
Rs.5,001-Rs.7,500	-	-	-	-
Rs.7,501-Rs.10,000	-	-	-	-
≥Rs.10,001	30	100	30	100

Table 2 depicts that all the mother in the control and experimental group were earning income of about Rs. 10.001 (100%). Majority of the mother in the control group living in Joint family (83.3%), belongs to Hindu (76.7%). Most of them are under-graduate (70%), married at the age of 21-25 years (63.3%), and working (60%). Significant percentage of the mothers is in the age group 21-25 years (46.7%).

Most of the mothers in the experimental group living in the Joint family (73.3%) and belongs to Hindu (63.3%), not working (63.3%). Significant percentage of mothers had graduate and post graduate (46.7%) and married at the age of 21-30 years (46.7%).

Table 3

Frequency and Percentage Distribution of Obstetric Variables in the Control and Experimental Group of Postnatal Mothers with Vaginal Delivery (Gestational weeks at delivered, no. of antenatal visits, order of pregnancy, co-morbidity and complication)

Sample Characteristics	Control group (n=30)		Experimental group (n=30)	
	f	p	f	p
Gestational weeks at delivered				
≤35	-	-	-	-
36-37	5	16.7	5	16.7
38-39	22	73.3	19	63.3
≥40	3	10	6	20
No of visits				
No visits	-	-	-	-
1-4 visits	-	-	-	-
≥4	30	100	30	100
Order of pregnancy				
Primi gravida	22	73.3	17	56.7
Second gravida	8	26.7	7	23.3
Third gravida	-	-	6	20
Multi gravida	-	-	-	-
Type of delivery				
Normal vaginal delivery	19	63.3	2	6.7

Sample Characteristics	Control group (n=30)		Experimental group (n=30)	
	f	p	f	p
Assisted vacuum delivery	11	36.7	28	93.3
Assisted forceps delivery	-	-	-	-
Co-morbidity				
H/O illness during pregnancy	1	3.3	-	-
H/O illness before pregnancy	3	10	4	13.3
Nil	26	86.7	26	86.7
Complications				
Yes	2	6.7	-	-
No	28	93.3	30	100
Type of complications				
PPH	-	-	-	-
Breast complications	-	-	-	-
Infections	2	6.6	-	-
Sub-involutions	-	-	-	-
Others	-	-	-	-

Table 3 reveals all the mothers in the control and experimental group are had ≥ 4 visits (100%). Majority of the mother had no complications (96.7%) and no co-morbidity (86.7%). Most of them were primi gravida (73.3%), delivered at gestational weeks of 38-39 (73.3%) and delivered through normal vaginal delivery (63.3%).

In the experimental group of mothers most of them are delivered at the gestational weeks of 38-39 (56.7%) and order of pregnancy are primi gravida (56.7%). All the mothers had not developed any complications (100%), majority of them had normal vaginal delivery (93.3%) and without co-morbidity (86.7%).

Fig.3 depicts that in the pre-test most of the nurses (62.5%) had adequate knowledge. Majority of the nurses (95%) had adequate knowledge after the post-test.

Fig. 4 depicts that majority of the postnatal mothers in the control group (73.4%) had highly satisfied in the nursing care.

In the experimental group, majority of the mothers (86.7%) had highly satisfied in the nursing care.

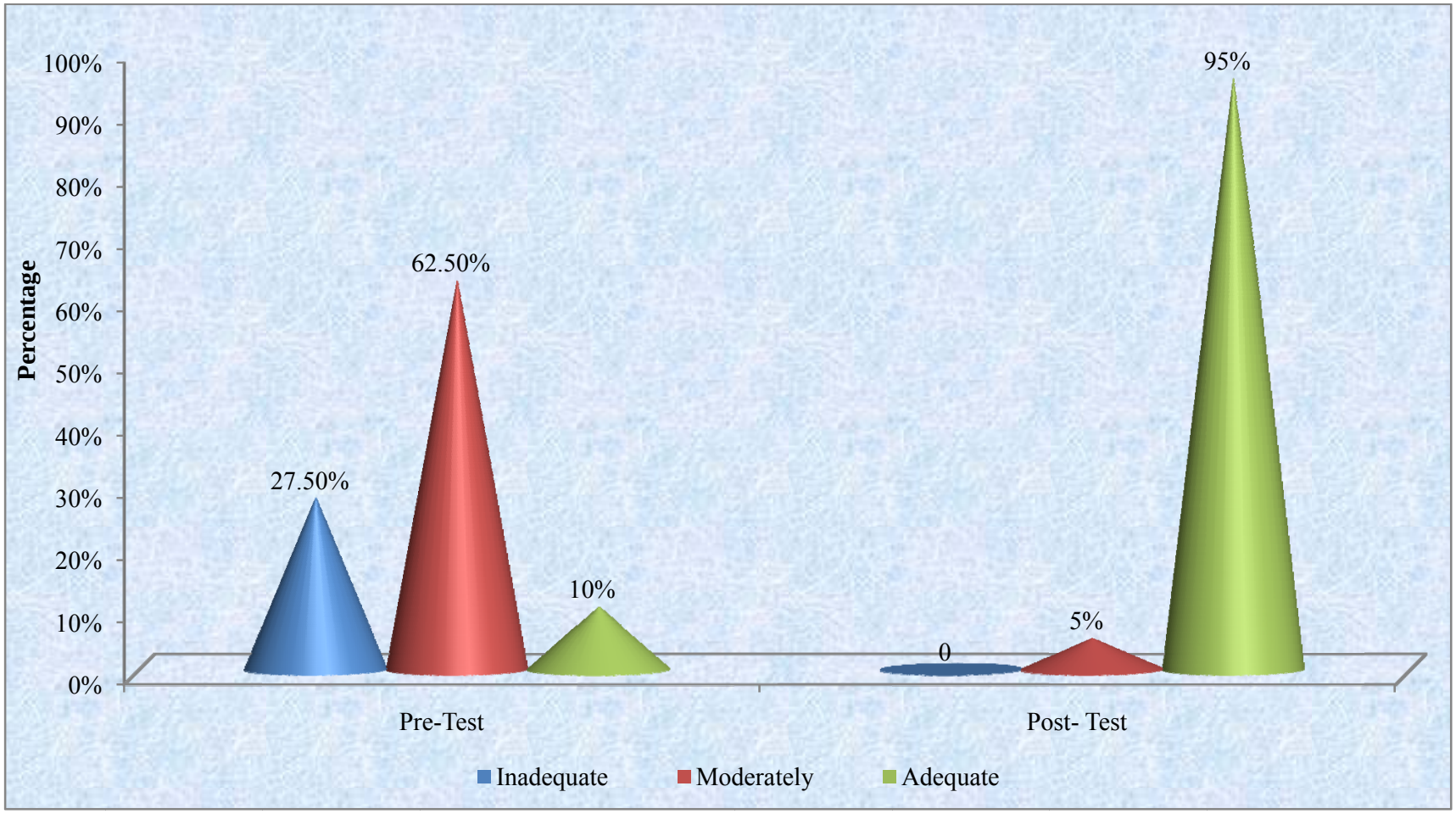


Fig. 3 Percentage Distribution of Pre and Post-test Level of Knowledge of Nurses in Clinical Pathway

Table 4

Frequency and Percentage Distribution of Practice of Nurses in Control and Experimental group of Postnatal Mothers with Vaginal Delivery

Practice scores	Control group (n=30)		Experimental group (n=30)	
	f	p	f	p
Compliant	30	100	30	100
Partially compliant	-	-	-	-
Non-compliant	-	-	-	-

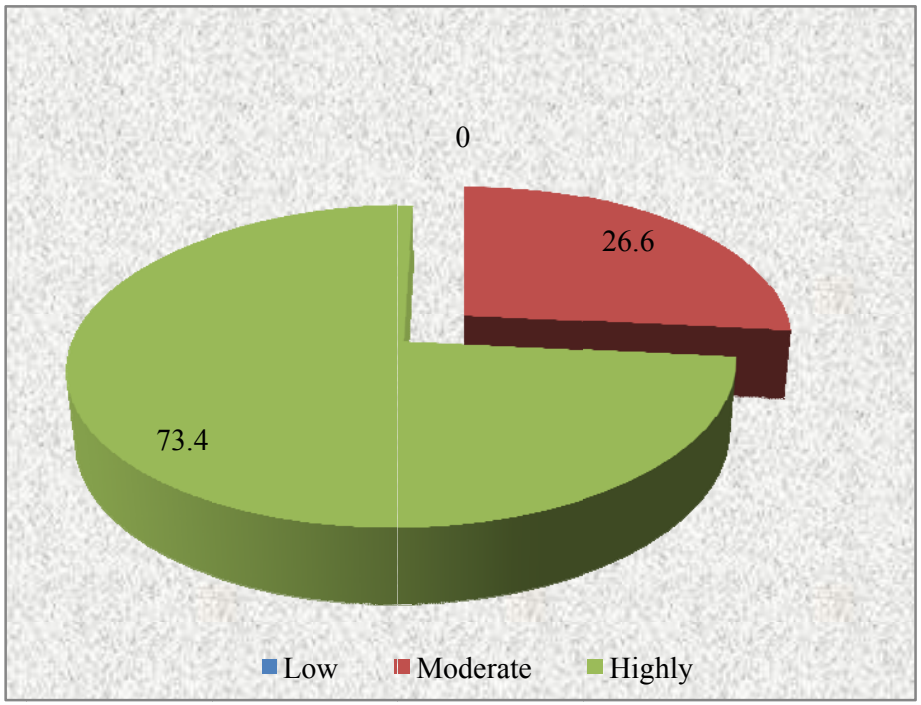
The data given in table 4 indicates both the experimental and control group of postnatal mothers were having compliance of activities (100%), but there is confidence difference between these groups. It has been later discussed with significance table.

Table 5

Frequency and Percentage Distribution of Day wise Practice Scores of Nurses in Control and Experimental group of Postnatal Mothers with Vaginal Delivery

Practice Scores	Control Group(n=30)				Experimental Group(n=30)	
	Partially Compliant		Compliant		Compliant	
	f	p	f	p	f	p
Day 1 (1hr-24hrs)	8	9.52	76	90.47	40	100
Day 2 (24hrs-48hrs)	2	4.88	39	95.12	40	100

Table 5 reveals that majority of the nurse practice in control group falls as compliance activities during Day 1 and Day 2 are 90.47% & 95.12% respectively. Majority of the nurse practice in the experimental group as compliance activities during Day 1 and Day 2 are 100%.



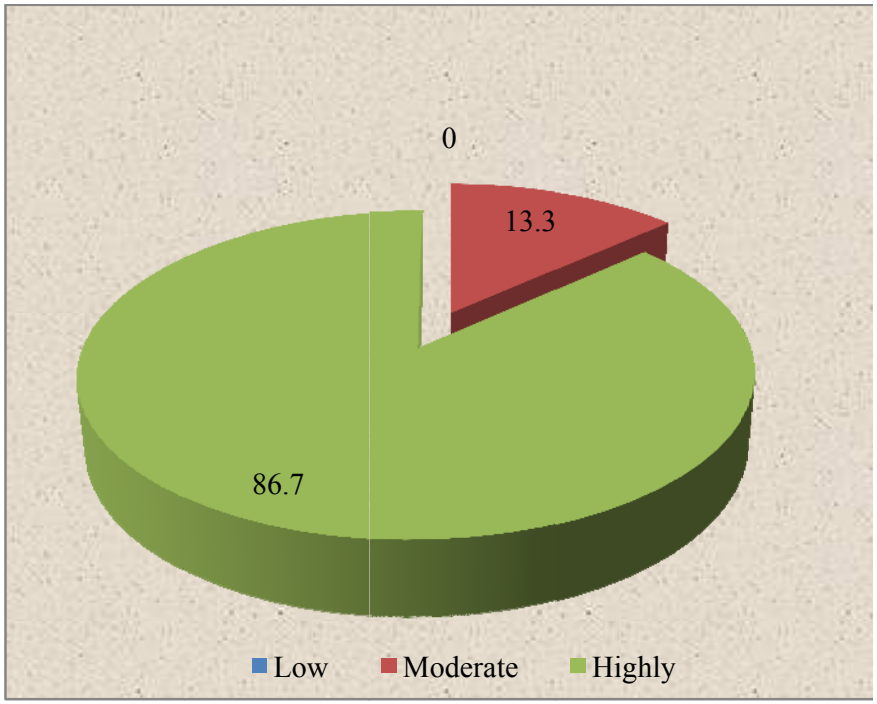


Fig.4 Percentage Distribution of Level of Satisfaction in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Table 6

Frequency and Percentage Distributions of Maternal Outcome in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Maternal outcome	Control group (n=30)		Experimental group (n=30)	
	f	p	f	p
No complications	28	93.3	30	100
Minor complications	2	6.7	-	-
Major complications	-	-	-	-

It was observed that the majority of the mothers were not developed any complications (93.3%) in the control group.

In the experimental group, none of the mothers were developed any complications (100%).

Table 7

Comparison of Mean and Standard Deviation of Pre and Post-test Level of Knowledge in Clinical Pathway for Postnatal Mothers with Vaginal Delivery

(N=40)

Knowledge scores	Mean	SD	't' value
Pre-test	14.7	3.33	13.64***
Post-test	22.3	2.37	

***P< 0.001

It can be incurred from table 7 that mean and standard deviation of level of knowledge of nurses were high in the post-test (M= 22.3, SD=2.37) in comparison to the pre-test (M=14.7, SD=3.33). The level of confidence was 99.9% and it shows the effectiveness of clinical pathway upon the nurses on postnatal mothers with vaginal delivery. Hence the null hypothesis Ho_1 was rejected.

Table 8

Comparison of Mean and Standard Deviation of Pre and Post-test Level of Knowledge among Nurses in relation Various Aspects to Clinical Pathway on Postnatal Mothers with Vaginal Delivery

(N=40)

Knowledge Scores	Pre-test		Post-test		't' value
	Mean	SD	Mean	SD	
Clinical pathway	1.675	0.48	8.26	21.02	23.62***
Immediate and late postnatal care	7.75	0	10.25	0	4.646**
Newborn care	5.45	0.0001	7.4	0.664	0.316

**P<0.01

Table 8 shows that mean and standard deviation of knowledge scores of nurses in the pre-test were low than the post-test. The level of confidence was 99.9% with regard to Clinical pathway. This table shows that effectiveness of the clinical pathway upon the nurses on postnatal mothers with the vaginal delivery. Hence the null hypothesis Ho_1 was rejected.

Table 9

Comparison of Mean and Standard Deviation of Practice of Nurses among Postnatal Mothers with Vaginal Delivery

(N=40)

Practice scores (1 hour - 48hours)	Mean	SD	't' value
Control group (n=30)	211.8	2.8	13.73***
Experimental group (n=30)	232.8	7.88	

***P< 0.001

It can be incurred from table 9 that mean and standard deviation of practice scores of nurses were high in the after the clinical pathway administered (M= 232.8, SD=7.88) in comparison to the before clinical pathway administration (M=211.8, SD=2.8). The level of confidence was 99.9% and it shows the effectiveness of clinical pathway upon the nurses on postnatal mothers with vaginal delivery. Hence the null hypothesis Ho_1 was rejected.

Table 10

Comparison of Mean and Standard Deviation of Day wise Practice of Nurses among Postnatal Mothers with Vaginal Delivery

Practice	Control Group (n=30)		Experimental Group (n=30)		't' value
	Mean	SD	Mean	SD	
Day 1 (1hr-24hrs)	73.26	2.91	83.03	1.09	17.76***
Day 2 (24hrs-48hrs)	35.56	1.5	40.63	0.55	18.1***

***P<0.001

It can be incurred from table 10 that mean and standard deviation of practice scores of nurses were low in the Control group (M= 73.26, SD=2.91) in the Day 1 and Day 2 (M= 83.03, SD= 1.09) comparison to the Experimental group of Day 1 (M=35.56, SD= 1.5) and Day 2 (M= 40.63, SD= 0.55). The level of confidence was 99.9% and it shows the effectiveness of clinical pathway upon the nurses on postnatal mothers with normal vaginal delivery. Hence the null hypothesis Ho_1 was rejected.

Table 11

Comparison of Mean and Standard Deviation of Level of Satisfaction in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Level of satisfaction	Mean	SD	't' value
Control group (n=30)	67.5	10.73	3.069***
Experimental group (n=30)	74.46	6.27	

**P< 0.01

Table 11 that mean and standard deviation of level of satisfaction of postnatal mothers in the experimental group (M= 74.46, SD=6.27) is high when compared to the control group (M=67.5, SD= 10.73). The level of confidence was 99% and it shows that effectiveness of clinical pathway upon the level of satisfaction of the postnatal mothers. Hence the null hypothesis $Ho_2$was rejected.

Table 12

Comparison of Mean and Standard Deviation of Clinical Pathway on Various Dimensions of Nursing Care in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Clinical Pathway Components	Control Group (n=30)		Experimental Group (n=30)		't' value
	Mean	SD	Mean	SD	
Immediate Assessment	3	0	14.8	0.48	4.27**
Oxygenation	3.83	1.487	6.76	0.43	11.26***
Nutrition	8.4	0.67	8.9	0.3	5**
Elimination	3.93	0.82	5.86	0.34	0.98
Position	3.3	0.7	3.56	0.5	0.09
Rest	4	0.64	5	0	9.09***
Comfort	7.5	0.9	9.6	0.67	10.5***
Regulation	3.53	0.62	4	0	4.7**
Personal hygiene	6.76	0.72	8.6	0.49	18.4***
Safety	17.4	1.99	20.86	0.86	9.1***
Communication	6.3	0.59	6053	0.62	0.57
Spiritual	3.03	0.18	4	0	9.7***
Activity	4.5	0.77	5.83	0.37	10.23***
Diversional Support	3.76	0.43	4	0	10***
Health Education	7.43	0.93	11	0	25.07***
Discharge plan	2.46	0.5	3	0	0.18

$P< 0.001$, $P<0.01$

The mean and standard deviation was given in the table 12 about the components in the clinical pathway practice checklist. The level of confidence was 99.9% ($P<0.001$) in regard to oxygenation, comfort, rest, personal hygiene, safety, spiritual, activity, Diversional support and health education and 99% confidence at the level of $P<0.01$ in regard to Immediate assessment, nutrition, and regulation. Hence the null hypothesis Ho_1 rejected.

Table 13

Comparison of Mean and Standard Deviation of Level of Satisfaction in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Level of Satisfaction	Control Group (n=30)		Experimental Group (n=30)		't' value
	Mean	SD	Mean	SD	
Environment Comfort Nursing Care Nutrition Elimination Activity Rest, Position Personal Hygiene Safety, Spiritual need Communication Family Involvement Health Education Discharge Plan	16.96 17.2 16.76 16.23	3.468 2.6 3.11 3.48	19 18.56 18.83 18.06	1.66 2.01 1.62 2.87	2.95 2.3 3.28** 2.25

P<0.01

Table 13 shows about the mean and standard deviation of level of satisfaction in regard to rest, position, personal hygiene, safety and spiritual need was low in the control group (M=16.76, SD=3.11) when compared to the experimental group (M= 18.83, SD= 1.62). The level of confidence was 99.9% and it shows the effectiveness of the clinical pathway upon the level of satisfaction of the postnatal mothers. Hence the null hypothesis Ho_2 was rejected.

Table 14

Comparison of Mean and Standard Deviation of Maternal Outcome in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Maternal outcome	Mean	SD	't' value
Control group (n=30)	3.26	3.55	3.336***
Experimental group (n=30)	0.93	1.43	

**P< 0.01

The mean and standard deviation was depicted in the table 14 about the maternal outcome of postnatal mothers in the experimental group (M= 0.93, SD=1.43) is low when compared to the control group (M=3.26, SD= 3.55) which indicates the experimental group of mothers are not developed complications. The level of confidence was 99% and it shows that effectiveness of clinical pathway upon the maternal outcome of the postnatal mothers. Hence the null hypothesis Ho_2 was rejected.

Table 15

Association between Selected Demographic Variables and the Level of Knowledge of Nurses in Pre and Post-test regarding Clinical Pathway of Postnatal Mothers with Vaginal Delivery

Demographic variables	Level of Knowledge (n=30)								
	Pre-test					Post-test			
	Inadequate n	Moderate n	Adequate n	df	χ^2	Moderate n	Adequate n	df	χ^2
Age in years									
21-24	10	17	4			1	30		
25-26	1	6	0	4	3.756	1	6	2	1.581
>27	0	2	0			0	2		
Religion									
Hindu	3	14	1	2	3.265	0	18	1	1.722
Christian	8	11	3			2	20		
Education									
Diploma	10	12	2	2	6.045	1	23	1	0.088
BSc nursing	1	13	2			1	15		
Marital status									
Married	1	3	0	2	0.566	0	4	1	0.234
Single	10	22	4			2	34		
Type of Residence									
Home	3	5	2	2	1.697	0	10	1	0.702
Hostel	8	20	2			2	28		
Years of experience									
≤1	5	7	0			1	11		
2	1	8	1	4	4.652	0	10	2	0.819
>3	5	10	3			1	17		
Income per month (Rs)									
<5000	3	7	1	4	3.711	1	10	2	2.816
5001-7500	7	14	1			1	22		
>7501	1	4	3			1	6		

Demographic variables	Level of Knowledge (n=30)								
	Pre-test					Post-test			
	Inadequate n	Moderate n	Adequate n	df	$\chi 2$	Moderate n	Adequate n	df	$\chi 2$
Previous information on clinical pathway									
Yes	1	6	2	2	2.901	0	9	1	0.611
No	10	19	2			2	29		
Source of Information									
Books	1	2	2	2	3.6	0	5	-	-
Collegues	0	4	4			0	4		

*P<0.01

The table 15 shows there is association between the years of experience and educational qualification in the level of knowledge for the nurses in the pre- test and post-test. It has proven that there is association between the selected demographic variables and level of knowledge. Hence the null hypothesis Ho_3 was rejected.

Table 16

Association of Selected Demographic Variables and the Level of Satisfaction in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Demographic Variables	Level of Satisfaction							
	Control Group(n=30)		df	χ^2	Experimental Group(n=30)		df	χ^2
	Moderate n	Adequate n			Moderate n	Adequate n		
Age in years								
<25	3	1			0	12		
26-29	5	14	2	7.325	2	10	2	2.22
≥30	0	7			1	5		
Religion								
Hindu	7	16			2	17		
Muslim	0	3	2	1.264	0	2	3	2.71
Christian	1	22			1	2		
Others	0	0			0	6		
Educational qualification								
Secondary	4	3			0	2		
Graduate	3	18	2	5.528	0	14	2	3.81
Post graduate	1	1			3	11		
Type of family								
Nuclear	1	4			0	8		
Joint	7	18	1	0.136	3	19	1	1.212
Occupation								
Working	4	14			1	10		
Not working	4	8	1	0.455	2	17	1	0.016
Age at Marriage (in years)								
<20	3	1			0	3		
21-25	5	14	2	7.325	0	14	2	4.359
≥26	0	7			3	10		
Income (Rupees)								
>10,001	8	22	0	0	3	27	0	0

***P<0.01

From the data presented in table 16 it can be revealed that there is association between the level of satisfaction with regard to age in years, educational qualification and age at marriage in the control group of postnatal mothers and age at marriage in the experimental group. Hence null hypothesis Ho_4 was rejected.

Table 17

Association of Selected Demographic Variables and Maternal Outcome in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Demographic Variables	Maternal Outcome					
	Control Group (n=30) No Complications n	df	χ^2	Experimental Group (n=30) No Complications n	df	χ^2
Age in years						
<25	14	-	-	12	-	-
26-29	12			12		
≥30	4			6		
Religion						
Hindu	23			19		
Muslim	3	-	-	2	-	-
Christian	4			3		
Others	0			6		
Educational qualification						
Secondary	7	-	-	2	-	-
Graduate	21			14		
Post graduate	2			14		
Type of family						
Nuclear	5	-	-	8	-	-
Joint	25			22		
Occupation						
Working	18	-	-	11	-	-
Not working	12			19		
Age at Marriage (in years)						
<20	4	-	-	3	-	-
21-25	19			14		
≥26	7			13		
Income (Rupees)		-	-		-	-
>10,001	30			30		

The data presented in table 17 it can be revealed that there is no association between age, religion, occupation and income per month with the maternal outcome in the control group of postnatal mothers. Hence null hypothesis Ho_4 was retained. No statistics could be applied to find the association between selected demographic variables and the maternal outcome.

Table 18

Association between Selected Obstetrical Variables and the Level of Satisfaction in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Obstetrical variables	Level of Satisfaction							
	Control Group (n=30)		df	χ^2	Experimental Group (n=30)		df	χ^2
	Moderate n	Adequate n			Moderate n	Adequate n		
Gestational weeks at delivered								
36-37	0	5			1	4		
38-39	6	16	2	4.277	2	17	2	1.228
>40	2	1			0	6		
No of antenatal visits								
>4	8	22	-	-	3	27	-	-
Order of pregnancy								
Primi gravida	6	16			2	15		
Second gravida	2	6	2	0.015	1	6	2	8.68
Third gravida	0	0			0	6		
Co-morbidity								
History	2	2	1	1.285	1	3	1	1.154
No history	6	20			2	24		
Mode of Delivery								
Normal vaginal delivery	4	15	1	0.835	0	30	0	0
Vacuum delivery	4	7			0	0		
Complications during postnatal period								
Yes	0	0	0	0	0	0	0	0
No	8	22			3	27		

***P<0.01 Table 18 it can be revealed that there is association between the levels of satisfaction with regard to gestational weeks at delivered in the control group and order of pregnancy in the experimental group. Hence null hypothesis Ho_5 was rejected.

Table 19

Association between Selected Obstetrical Variables and Maternal Outcome in Control and Experimental Group of Postnatal Mothers with Vaginal Delivery

Obstetrical variables	Maternal Outcome: Control Group (n=30) No Complications n	df	$\chi 2$	Maternal Outcome: Experimental Group (n=30) No Complications n	df	$\chi 2$
Gestational weeks at delivered						
36-37	5			5		
38-39	22	-	-	19	-	-
>40	3			6		
No of antenatal visits						
>4	30	-	-	30	-	-
Order of pregnancy						
Primi gravida	22			17		
Second gravida	8	-	-	7	-	-
Third gravida	0			6		
Co-morbidity						
History	4	-	-	4	-	-
No history	26			26		
Mode of Delivery						
Normal vaginal delivery	19	-	-	30	-	-
Vacuum delivery	11			0		
Complications during postnatal period						
Yes	0	-	-	0	-	-
No	30			30		

Table 19 it can be revealed that there is no association between gestational weeks at delivered, no of antenatal visits, order of pregnancy and mode of delivery in the control group of postnatal mothers and the maternal outcome. Hence null hypothesis Ho_5 was retained. No statistics could be applied to find the association between selected obstetrical variables and the maternal outcome.

Summary

This chapter dealt with the analysis and the interpretation of the data collected by the researcher. From the analysis it can be inferred that the level of knowledge and the practice score of nurses was knowledge was high in the post test of nurses. There is association between the selected demographic variables and obstetrical variables of with regard to some variables in the postnatal mothers with their level of satisfaction and there is no association between the selected demographic variables and obstetric variables of postnatal mothers with their outcome.

Chapter V

Discussion

CHAPTER V

DISCUSSION

Statement of the Problem

A Quasi- Experimental Study to Assess the Effectiveness of Clinical Pathway for Postnatal Mothers with Vaginal Delivery upon the Knowledge and Practice of Nurses and Maternal Outcome at Apollo First Med Hospitals, Chennai.

The Objectives of the Study

1. To assess the pre and post-test level of knowledge and practice of nurses regarding clinical pathway for postnatal mothers with vaginal delivery.
2. To evaluate the effectiveness of clinical pathway for postnatal mothers upon the knowledge and practice of nurses.
3. To assess and compare the maternal outcome in control and experimental group regarding clinical pathway for postnatal mothers with vaginal delivery.
4. To determine the level of satisfaction upon nursing practice in the control and experimental groups of postnatal mothers with vaginal delivery.
5. To determine the association between the selected demographic variables of nurses with their pre and post-test level of knowledge regarding clinical pathway for postnatal mothers with vaginal delivery.
6. To determine the association between the selected demographic variables with maternal outcome and level of satisfaction in control and experimental groups of postnatal mothers with vaginal delivery.

7. To determine the association between the selected obstetric variables with maternal outcome and level of satisfaction in control and experimental groups of postnatal mothers with vaginal delivery.

The researcher conducted the study among the nurses upon their level of knowledge and the practice before and after administration of clinical pathway, among the postnatal mothers with vaginal delivery with their level of satisfaction and the maternal outcome in the control and experimental group.

The discussion is presented under the following heading:

- Demographic variables of nurses in pre & post-test level of knowledge.
- Demographic variables and Obstetric variables of control and experimental group of postnatal mothers.
- Mean and standard deviation of nurses level of knowledge.
- Mean and standard deviation of demographic variables and level of satisfaction and maternal outcome.
- Mean and standard deviation of obstetric variables and level of satisfaction and maternal outcome.
- Association between selected demographic variables and level of knowledge of nurses.
- Association between selected demographic variables and level of satisfaction and maternal outcome.
- Association between selected obstetric variables and level of satisfaction and maternal outcome.

Demographic variables of nurses

Majority of the nurses were between the age group of 21-24 years (77.5%) which shows that they have experience in caring postnatal mothers with vaginal delivery. Most of the nurses were qualified as B.Sc (N) (60%) and significantly lesser of them had Diploma in nursing (40%). This data proves that the age of the nurses is also a factor considered in providing the care. It was supported by the study done by Rupp Wysong in 2008 stated that the age of the nurses contributing in nursing care because they are very interested in learning when they are young rather than the older with experience and there was a marked increase in information or knowledge about the clinical pathway among the B.Sc (N) qualified nurses which was even supported in the study conducted by Hilda Mary in 2011 saying that education plays an unequivocal role in the healthy practices of an individual in her professional career. From this data, the researcher observed that the nurses having knowledge on scientific principles of doing care, they are better in learning and doing the nursing activities. That knowledge will be obtained only through the qualified degree of B.Sc (N) because in Diploma course they are only exposing in the clinical practice but not the theory knowledge.

In this study the researcher found that Majority of the nurses had no previous information regarding clinical pathway (77.5%) before the administration, so they may be not have adequate knowledge on the timely care for the postnatal mothers to prevent complications. In 2007 MgZwakhalen et al found that the work experience with respect to beliefs about the pain were assessed and managed. Majority of the nurses (95%) had adequate knowledge level regarding clinical pathway in the post-test when compared to pre-test (62.5%), it reveals that there is directly proportional to the level of knowledge

and the practices of the nurses were supported by Drass (1989). The researcher found that the knowledge level was low in the pre-test when compared to the post-test, from this conclude that person one who is not aware of particular information they are very interested in learning new information. By this way, the nurses are gained more knowledge regarding the clinical pathway for postnatal mother from the structured teaching programme.

Demographic variables of postnatal mothers

Significant of the mothers in the control (46.7%) and experimental group (40%) were in the age group of 21-25 years, it could be interpreted that the public had adequate awareness about the correct time for pregnancy. This view was highlighted by Hamilton (2002) in their study that the average age of mothers at the time of birth increased from 24.6 in 1970 to 27.2 in 2000, whereas the median age of mothers hang their first baby increased from 22.1 in 1970 to 24.6 in 2000. Since majority of the mother (63.3%) in the experimental group were home maker they can have adequate rest during pregnancy and can be free from psychological stress, which is an important factors in promoting maternal as well as fetal well-being. According to the census held in 2001 by National Literacy Mission, the percentage of female literacy has increased from 8.86% in 1951 to 54.16% in 2001. The researcher found that the educational level of the mother is a determining factor to the attitude and knowledge of the people towards their own health.

The researcher found that the all the mothers having income ≥ Rs.10,001 (100%) per month. When the income of the patients increase they can able to afford high quality

care and get highly satisfied with the care from the health care agencies. Derek delia (2011) viewed that the Poor, uninsured, and minority patients depend disproportionately on hospital outpatient departments (OPDs) and freestanding health centres for ambulatory care. The researcher suggests restructuring the delivering of health care facilities so that it is more responsive to the concerns of low income patients.

Obstetric variables of postnatal mothers

Most of the mothers in the control and experimental group all of them were attending ≥ 4 antenatal visits and between 38 – 39 weeks of gestation (73.3%, 63.3%) during delivery and few of them were beyond 40 weeks (20%). This proves that risk of preterm labor and maternal complications was reduced with regular antenatal visits, proper delivering the baby at the right time without leading to post term labor. This view was supported by Heimstad et al .(2006) in the study conducted at the Department of Obstetrics and Gynecology and National Center for Fetal Medicine, Norway that maternal complications were lowest at 39 weeks of gestation without the preterm and post term labor. The researcher finding reveals that when the mothers were delivered at the 38-39 weeks of gestation, there is reduced occurrences of maternal and infant mortality rates.

All the mother in control and experimental group were attended ≥4 antenatal visits which indicate, the mothers are prevented/ reduced from high risk by the regular follow-up which was supported by the study conducted by John (2002). In this study, he mentions that the proper antenatal check-up will reveal the problem during antenatal period and thereby able to manage the condition by preventing the complications.

Mean and standard deviation of nurses level of knowledge

Mean and standard deviation of level of knowledge of nurses were high in the post-test (M= 22.3, SD=2.37) in comparison to the pre-test (M=14.7, SD=3.33). The level of confidence was 99.9% and it shows the effectiveness of clinical pathway upon the nurses on postnatal mothers with vaginal delivery. From this finding, the researcher concluded that the level of knowledge will increase when the unknown concept was taught to improve in knowledge and practice.

Mean and standard deviation of demographic variables and level of satisfaction and maternal outcome

Mean and standard deviation of level of satisfaction in regard to rest, position, personal hygiene, safety and spiritual need was low in the control group (M=16.76, SD=3.11) when compared to the experimental group (M= 18.83, SD= 1.62). The level of confidence was 99.9% and it shows the effectiveness of the clinical pathway upon the level of satisfaction of the postnatal mothers. The investigator explains that the level of satisfaction depends on the practicing of care and found that it was decreased in the control group than the experimental group measured by the rating scale developed by the researcher. There was no difference in the maternal outcome in both the groups, because there is changes in the sequential of care but not in the way of practicing.

Mean and standard deviation of obstetric variables and level of satisfaction and maternal outcome

There is association between the levels of satisfaction with regard to gestational weeks at delivered in the control group and order of pregnancy in the experimental group. It shows that the obstetrical variable is also responsible in improving level of

satisfaction. There is also no difference between the obstetrical variables and the maternal outcome.

Association between the selected demographic variables and the level of knowledge for nurses regarding clinical pathway

There is association between the years of experience and educational qualification in the level of knowledge for the nurses in the pre- test and post-test. It has proven that there is association between the selected demographic variables and level of knowledge, when there is education and experience with the patient, then the nurses learns better to improve their scientific knowledge.

Association between the selected demographic variables and the level of satisfaction and maternal outcome of the postnatal mothers

Articles in July 2006 issue of Nursing Journal of India shows that the overall mean satisfaction score of mothers was 92.98 and Standard deviation was 12.48. Majority of mothers (74%) were partially satisfied, 16% were found to be dissatisfied and only 10% were satisfied with the postnatal care received.

Majority of the mothers belonged to the age group of 21-30 years (73%), 23% were below 20 years and only 4% were above 31 years. As regards education: Maximum number of mother's in the control and experimental group (70%, 46.7%) were graduates, (6.7%, 46.7%) of mothers were post-graduate and having primary education (23.3%, 6.7%). Tweed study indicates that there is association between the educational status and the level of satisfaction, because only when the mother is educated she can able to cope up with procedures carried out by the nurses.

Majority of mothers (67%) belonged to the income group of below Rs. 3000. Only (5%) belonged to the income group between Rs. 4001- Rs. 5000, whereas (14%) belonged to the income group between Rs. 3001- Rs. 4000 and above Rs. 5000. The researcher found that the level of satisfaction in the control group (73.4%) is low when compared to that the experimental group (86.7%). The chi-square value of 7.325 (df-2) was significant at 0.05 level. There was a significant relationship between satisfactions of mothers with type of delivery on postnatal care rendering to them. This view was supported by Chopra in the year 2001 as he stated that anaemia is the most common medical disorders affecting a least 20% of pregnant women and have a higher incidence of complications during labour.

Significant percentage of patients in experimental group (100%) were highly satisfied this findings indicate that clinical pathway was very effective in improving the quality of care, reduce the hospitalizations, and improve patient satisfaction. This view have been emphasized by Carol (2008-2009) in a study to explore the path to care in the Application of hysterectomy patients.64 patients were randomly divided into experimental and control group of 32 cases each .In the experimental group the length of stay and hospitalization costs were lower than the control group ($P < 0.05$).The knowledge of health care workers and patient satisfaction was more in the experimental group compared to the control group ($P < 0.05$). Implementation of nursing clinical pathway can reduce uterine fibroid hospitalization time, reduce hospitalization costs, while improving patient satisfaction and knowledge level of Nurses, thereby improving the quality of care.

Association between the selected obstetrical variables and the level of satisfaction and maternal outcome of the postnatal mothers

There is no association between the selected obstetrical variables and the maternal outcome in the control and experimental group of postnatal. The researcher says that there is no restriction to apply for particular variables rather the clinical pathway can be practice for any obstetrical variables for the practice of nursing care.

Summary

This chapter has dealt about the discussion of various aspects of the study findings. This emphasized on the demographic variables of nurses, demographic and obstetric variables of the postnatal mothers. It has also dealt about the mean and standard deviation of level of knowledge and their practice scores in the pre-test and post-test, maternal level of satisfaction and outcome in the control and experimental groups. The discussion has been made with various research articles and current statistical data presented with the journals to support the researcher findings.

Chapter VI

Summary, Conclusion, Implications and Recommendations

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

The heart of the study is writing report of the findings. The researcher concise the whole study and made it for future references. This chapter includes summary, conclusion, implication and recommendation.

Summary

A Quasi- Experimental Study to Assess the Effectiveness of Clinical Pathway for Postnatal Mothers with Vaginal Delivery upon the Knowledge and Practice of Nurses and Maternal Outcome at Apollo First Med Hospitals, Chennai.

The objectives of the Study

1. To assess the pre and post-test level of knowledge and practice of nurses regarding clinical pathway for postnatal mothers with vaginal delivery.
2. To evaluate the effectiveness of clinical pathway for postnatal mothers upon the knowledge and practice of nurses.
3. To assess and compare the maternal outcome in control and experimental group regarding clinical pathway for postnatal mothers with vaginal delivery.
4. To determine the level of satisfaction upon nursing practice in the control and experimental groups of postnatal mothers with vaginal delivery.
5. To determine the association between the selected demographic variables of nurses with their pre and post-test level of knowledge regarding clinical pathway for postnatal mothers with vaginal delivery.

6. To determine the association between the selected demographic variables with maternal outcome and level of satisfaction in control and experimental groups of postnatal mothers with vaginal delivery.
7. To determine the association between the selected obstetric variables with maternal outcome and level of satisfaction in control and experimental groups of postnatal mothers with vaginal delivery.

Null Hypotheses

Ho_1 There will be no significant difference between pre and post-test level of knowledge and practice of nurses regarding clinical pathway for postnatal mothers with vaginal delivery.

Ho_2 There will be no significant difference in the maternal outcome and level of satisfaction between the control and experimental group of postnatal mothers with vaginal delivery.

Ho_3 There will be no significant association between selected demographic variables with their pre and post-test level of knowledge among nurses regarding clinical pathway for postnatal mothers with vaginal delivery.

Ho_4 There will be no significant association between selected demographic variables with maternal outcome and the level of satisfaction in control and experimental group of postnatal mothers with vaginal delivery.

Ho_5 There will be no significant association between selected obstetric variables with maternal outcome and the level of satisfaction in control and experimental group of postnatal mothers with vaginal delivery.

The conceptual framework was made based on Jean Ball Deck Chair theory. The variables of the study were knowledge and practice. Null hypothesis were formulated. The level of confidence selected was $p<0.001$. An extensive review was made based on the opinions of the experts. A Quasi experimental study of one group pre-test and post-test design for nurses, control and experimental group of postnatal mothers were used. The study included 40 nurses and 60 postnatal mothers with purposive sampling technique. The study was conducted at Apollo first Med Hospitals, Chennai.

The researcher approached nurses in all the postnatal wards like A, D, E, H & I and selected 40 nurses for the study by purposive sampling technique. Maintained rapport and explained about the aims of research to the nurses which are going to be conducted for the postnatal mothers with vaginal delivery after obtained verbal consent. Assessed pre-test knowledge for the nurses regarding the clinical pathway for postnatal mothers with vaginal delivery through structured questionnaire. Thirty postnatal mothers with vaginal delivery were selected by using purposive sampling with written consent and observed the existing nursing practice. The researcher collected the data by daily 12 hours of nursing practice from 7am-7pm and the following nursing activities were collected from the night shift staff and the records of the mother.

Checked the maternal outcome and their level of satisfaction with the existing nursing practice through the rating scale. The nurses were taught about the clinical pathway and list of cares for postnatal mothers with vaginal delivery through the structured teaching programme and implemented the clinical pathway for the practice. The researcher selected 30 postnatal mothers by purposive sampling. After 7 days of clinical pathway implementation and teaching, the researcher administered the post-test

questionnaire to the same nurses and assessed their knowledge. Observed the nursing practice & checked the maternal outcome and their level of satisfaction with the rating scale. The compliance, partially compliance and non-compliance activities were monitored with the clinical pathway practice checklist. The data's were analyzed and found the results of the study.

Major findings of the study

Demographic variables of the nurses

Majority of the nurses were single (90%), between the age of 21-24 years (77.5%) and had no previous information about clinical pathway (77.5%). Most of the nurses are having educational status of Diploma in nursing (60%), with income of about Rs.5001-Rs.7500 (55%), belongs to the religion of Christians (55%). The significant no of years of experience of nurses are more than 4 years of experience (45%).

Demographic variables of the postnatal mothers with vaginal delivery

All the mother in the control and experimental group were earning income of about (100%). Majority of the mother in the control group living in Joint family (83.3%), belongs to Hindu (76.7%). Most of them are under-graduate (70%), married at the age of 21-25 years (63.3%), and working (60%). Significant percentage of the mothers is in the age group 21-25 years (46.7%).

Most of the mothers in the experimental group living in the Joint family (73.3%) and belongs to Hindu (63.3%), not working (63.3%). Significant percentage of mothers had graduate and post graduate (46.7%) and married at the age of 21-30 years (46.7%).

Obstetrical variables of the postnatal mothers with vaginal delivery

All the mothers in the control and experimental group are had ≥ 4 visits (100%). Majority of the mother had no complications (96.7%) and no co-morbidity (86.7%). Most of them were primi gravida (73.3%), delivered at gestational weeks of 38-39 (73.3%) and delivered through normal vaginal delivery (63.3%).

In the experimental group of mothers most of them are delivered at the gestational weeks of 38-39 (56.7%) and order of pregnancy are primi gravida (56.7%). All the mothers had no complications (100%), majority of them had normal vaginal delivery (93.3%) and without co-morbidity (86.7%).

Comparison of pre & post-test level of knowledge for nurses and practice scores

Majority of the nurses (95%) had adequate knowledge after the post-test. In the pre-test most of the nurses (62.5%) had moderately adequate knowledge.

Both the experimental and control group of postnatal mothers were having compliance of activities (100%), but there is confidence difference between these groups. It has been later discussed with confidence table.

Comparison of level of satisfaction and maternal outcome in control and experimental group of postnatal mothers

Majority of the postnatal mothers in the control group (73.4%) had highly satisfied in the nursing care. In the experimental group, majority of the mothers (86.7%) had highly satisfied in the nursing care.

Majority of the mothers were not developed no complications (93.3%) in the control group. In the experimental group, majority of the mothers were not developed no complications (100%).

Mean and standard deviation of knowledge scores of nurses and level of satisfaction with their outcome of postnatal mothers

Mean and standard deviation of level of knowledge of nurses were high in the post-test (M= 22.3, SD=2.37) in comparison to the pre-test (M=14.7, SD=3.33). The level of confidence was 99.9% and it shows the effectiveness of clinical pathway upon the nurses on postnatal mothers with vaginal delivery. Hence the null hypothesis Ho_1 was rejected.

Mean and standard deviation of practice scores of nurses were high in the after the clinical pathway administered (M= 232.8, SD=7.88) in comparison to the before clinical pathway administration (M=211.8, SD=2.8). The level of confidence was 99.9% and it shows the effectiveness of clinical pathway upon the nurses on postnatal mothers with vaginal delivery. Hence the null hypothesis Ho_1 was rejected.

The level of confidence was 99% and it shows that effectiveness of clinical pathway upon the level of satisfaction of the postnatal mothers with the Mean and standard deviation in the experimental group (M= 74.46, SD=6.27) was high when compared to the control group (M=67.5, SD= 10.73). Hence the null hypothesis Ho_2 was rejected.

The mean and standard deviation about the maternal outcome of postnatal mothers in the experimental group (M= 0.93, SD=1.43) is low when compared to the control group (M=3.26, SD= 3.55) which indicates the experimental group of mothers are not developed complications. The level of confidence was 97.9% and it shows that effectiveness of clinical pathway upon the maternal outcome of the postnatal mothers. Hence the null hypothesis Ho_2 was rejected.

Association of level of knowledge of nurses in pre & post test

There is association between the years of experience and educational qualification in the level of knowledge for the nurses in the pre- test and post-test. It has proven that there is association between the selected demographic variables and level of knowledge. Hence the null hypothesis Ho_3 was rejected.

Association between the Demographic variables and maternal outcome of postnatal mothers

There is no association between age, religion, occupation and income per month with the maternal outcome in the control group of postnatal mothers. Hence null hypothesis Ho_4 was retained. No statistics could be applied to find the association between selected demographic variables and the maternal outcome.

Association between the Demographic variables and level of satisfaction of postnatal mothers

There is association between the level of satisfaction retained with regard to age in years, educational qualification and age at marriage in the control group of postnatal

mothers and age at marriage in the experimental group. Hence null hypothesis Ho_4 was rejected.

Association between the Obstetrical variables and level of satisfaction of postnatal mothers

There is association between the levels of satisfaction retained with regard to gestational weeks at delivered in the control group and order of pregnancy in the experimental group. Hence null hypothesis Ho_5 was rejected.

Association between the Obstetrical variables and maternal outcome of postnatal mothers

There is no association between gestational weeks, no of antenatal visits, order of pregnancy and mode of delivered in the control and experimental group of postnatal mothers and the maternal outcome. Hence null hypothesis Ho_5 was retained. No statistics could be applied to find the association between selected obstetrical variables and the maternal outcome.

Conclusion

This study shows that effectiveness of the clinical pathway on postnatal mothers with vaginal delivery. The researcher found that there is increase in knowledge after post-test among the nurses with practice of clinical pathway checklist. Among the postnatal mothers in the control and experimental group, the level of satisfaction and maternal outcome differs with slight significant differences. Finally the researcher

reveals that the clinical pathway is very essential for practicing the nursing care activities among all groups of clients with varying clinical conditions.

Implications

Nursing Practice

Clinical Pathways are structured, multi-disciplinary plans of care designed to support the implementation of clinical guidelines and protocols. They are designed to support clinical management, clinical and non-clinical resource management, clinical audit and also financial management. They provide detailed guidance for each stage in the management of a patient treatments & interventions with a specific condition over a given time period, and include progress and outcomes details. Clinical Pathways aim to improve, in particular, the continuity and co-ordination of care across different disciplines and sectors.

Nursing Education

The nursing care plan is a commonly used teaching tool in nursing education. By developing individualized nursing care plans for specific clients, students practice use of nursing process and making clinical judgments and decisions. However, the system of managed care has impacted current clinical practice, and many health care agencies have shifted their emphasis from requiring the traditional columnar nursing care plans to use of clinical pathways and standards of care. As result of this trend, nursing educators are faced with the problem of preparing students to cope with today's reality in clinical practice. In response to this problem, this article re-examines the practical utility of the traditional nursing care plan in nursing education. The article also introduces a

collaborative nursing care plan, the integration of the clinical pathway with the traditional nursing care plan, and its application in teaching.

Nursing Administration

Clinical pathways (integrated care pathways) can be seen as an application of process management thinking to the improvement of patient healthcare. An aim is to re-centre the focus on the patient's overall journey, rather than the contribution of each specialty or caring function independently. Instead, all are emphasised to be working together, in the same way as a cross-functional team. More than just a guideline or a protocol, a care pathway is typically crystallised in the development and use of a single all-encompassing bedside document, that will stand as an indicator of the care a patient is likely to be provided in the course of the pathway going forward; and ultimately as a single unified legal record of the care the patient has received, and the progress of their condition, as the pathway has been undertaken.

Nursing Research

Clinical pathway is using as an audit tool identify the characteristics of care well organized processes. The different research has been conducted on clinical pathway with various clinical conditions to identify the effectiveness on the patients care. The literature also suggests that clinical pathways must be developed, implemented, and evaluated utilizing validated methods including the use of best practice standards and can facilitate learning and change by employing a multitude of competencies while maintaining a sphere of influence over patient and families, nurses, and the system.

Nursing Theory

The researcher used the conceptual frame work based on Jean Ball Deck Chair (1987) in this study. This conceptual frame work helps to provide safe and secure maternity services for the population. It also stimulates to develop new models and theories for the identification of maternity needs and apply to reduce the high risks of reproductive women in future.

Recommendations

- The same study can be conducted with larger number of samples of postnatal mothers.
- A similar study can be conducted by using prospective study and retrospective.
- The study can be conducted at different settings.
- A study can be conducted at different clinical conditions.
- A study can be conducted with each nursing personnel individually for their overall nursing activities.
- A comparative study between two clinical settings can also be conducted.

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Appendices

APPENDIX – I

LETTER GRANTING PERMISSION TO CONDUCT THE STUDY

Apollo College of Nursing

(Recognised by the Indian Nursing Council and Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

CO/0160/11 15.03.11

To

The Medical Superintendent,
Apollo First Med Hospital,
154, Poonamalle High Road,
Kilpauk,
Chennai-10.

Respected Sir / Madam,

Sub.: To request permission for research study – Reg.

Greetings! As part of the curriculum requirement our 2nd year M. Sc. (N) student Ms. K.M.Sathya Devi has selected the following title for her research study.

"A Quasi experimental study to assess the effectiveness of clinical pathway for postnatal mother with normal vaginal delivery upon the knowledge and practice of nurses and maternal outcome at Apollo Hospitals, Chennai".

So I kindly request your goodselves to permit her to conduct study in your esteemed institution.

Thanking You,

Dr. LATHA VENKATESAN
PRINCIPAL

IS/ISO 9001:2000

Vanagaram to Ambattur Main Road, Ayanambakkam, Chennai - 600 095.
Ph. : 044 - 2653 4387 Tele fax : 044 - 2653 4923 / 044- 2653 4386

APPENDIX – II

LETTER REQUESTING OPINIONS AND SUGGESTIONS OF EXPERTS FOR ESTABLISHING CONTENT VALIDITY OF RESEARCH TOOL

From
MS. K.M. Sathya Devi,
M.Sc., (Nursing) Second Year,
Apollo College of Nursing,
Chennai - 600095.

To
Forwarded Through:
Dr. Latha Venkatesan,
Principal,
Apollo College of Nursing.

Sub: **Requesting for opinions and suggestions of experts for establishing content Validity for Research tool**.

Respected Madam,

I am a postgraduate student of the Apollo College of Nursing. I have selected the below mentioned topic for research project to be submitted to The Tamil Nadu Dr. M.G.R Medical University, Chennai as a partial fulfillment of Masters of Nursing Degree.

Title of the topic

"An Quasi- experimental study to assess the effectiveness of clinical pathway for postnatal mothers with vaginal delivery upon the knowledge and practice of nurses and maternal outcome at Apollo First Med Hospital, Chennai."

With regards may I kindly request you to validate my tool for its appropriateness and relevancy. I am enclosing the Background of the Study, Need for the study, Statement of the problem, Objectives of the study, Nurses Demographic Variable Proforma, Knowledge questionnaire for Nurses, Mothers Demographic and Obstetric Variable Proforma, Clinical Pathway for postnatal mothers and Rating Scale on Level of Satisfaction and the outcome of postnatal mothers. I would be highly obliged and remain thankful for your great help if you could validate and send it as soon as possible.

Thanking you,

Yours sincerely,
(K.M.SATHYA DEVI)

APPENDIX – III

LIST OF EXPERTS FOR CONTENT VALIDITY OF THE TOOL

1. **Dr. Latha Venkatesan, M.Sc., M.Phil., Ph.D.,**
   Principal cum Professor,
   Apollo College of Nursing,
   Chennai – 95.
2. **Dr. Deepa Thangamani,**
   M.D. OG., DNB. OG., MRCOG (UK).,
   Consultant Obstetrician & Gynaecologist,
   Apollo First Med Hospitals,
   Chennai – 10.
3. **Prof. Lizy Sonia.A., M.Sc (N),**
   Vice Principal cum Professor,
   Apollo College of Nursing,
   Chennai – 95.
4. **Prof. K.Vijayalakshmi,**
   M.Sc (N), M.A. Psychology,
   Professor,
   Apollo College of Nursing,
   Chennai-95.
5. **Mrs. Shobana, M.Sc (N),**
   Professor,
   Apollo College of Nursing,
   Chennai – 95.
6. **Mrs. Nesa Sathya Satchi, M.Sc (N),**
   Reader,
   Apollo College of Nursing,
   Chennai – 95.
7. **Mrs. Pappy Yuvarani, M.Sc (N),**
   Lecturer,
   Apollo college of Nursing,
   Chennai – 95.

APPENDIX-IV

ETHICS COMMITTEE LETTER

Ethics Committee

Apollo HOSPITALS
TOUCHING LIVES

22 June, 2011

To
Ms. K.M. Sathya Devi
1st Year M.Sc (Nursing)
Dept. of Obstetrics & Gynaecology
Apollo College of Nursing, Chennai
Tamil Nadu, India

Ref: Effectiveness of clinical pathway for postnatal mothers with normal vaginal delivery

Sub: Your letter dated 9 June, 2011 for approval of the above referenced project and its related documents

Dear Ms. K.M. Sathya Devi,

Ethics committee – Apollo Hospitals has received the following document submitted by you related to the conduct of the above – referenced study.

- Project Proposal titled "Effectiveness of clinical pathway for postnatal mothers with normal vaginal delivery"
- Study Performa

The above-mentioned documents have been reviewed and approved (through expedited review) by the Chairman, Vice-Chairman and Member Secretary at a specially convened meeting of the Ethics Committee. The study is hereby approved to be conducted by you in the presented form.

The following Ethics Committee members were present at the meeting held on 22 June, 2011

Name	Profession	Position in the committee
Mr. S. S. Narayanan	Ethicist	Chairman
Dr.Radha Rajagopalan	Clinician	Vice - Chairman
Dr. Jayanthi Swaminathan	Sr.GM Clinical & Collaborative Research	Member Secretary

Apollo Hospitals Enterprise Limited
21, Greams Lane, Off Greams Road, Chennai - 600 006
Tel : 91 - 44 - 2829 3333 Extn : 6008, 91 - 44 - 2829 5465 Extn : 6639 Fax : 91 - 44 - 2829 4449
E - Mail : ecapollochennai@gmail.com

Ethics Committee

Apollo HOSPITALS
TOUCHING LIVES

After due ethical and scientific consideration, the Ethics Committee has approved the above presentation submitted by you. Since your dissertation does not involve any administration of drug(s) or therapeutic composition(s) to patients and involves only interpretation of collected data, the Ethics Committee has decided to waive the requirement of informed consent.

The Ethics Committee is constituted and works as per ICH-GCP, ICMR and revised Schedule Y guidelines.

Yours sincerely,

Radhakrishnan

Date 22/6/11

Dr. Radha Rajagopalan
Ethics Committee – Vice Chairman
Apollo Hospitals, Chennai

DR. RADHA RAJAGOPALAN
Vice Chairman
Ethics Committee
Apollo Hospitals Enterprise Limited
Chennai-600 006. Tamil Nadu.

Apollo Hospitals Enterprise Limited
21, Greams Lane, Off Greams Road, Chennai - 600 006
Tel : 91 - 44 - 2829 3333 Extn : 6008, 91 - 44 - 2829 5465 Extn : 6639 Fax : 91 - 44 - 2829 4449
E - Mail : ecapollochennai@gmail.com

APPENDIX – V

CERTIFICATE FOR ENGLISH EDITING

TO WHOM SOEVER IT MAY CONCERN

This is to certify that the dissertation **"An Quasi experimental study to assess the effectiveness of clinical pathway for postnatal mothers with vaginal delivery upon the knowledge and practice of nurses and maternal outcome at Apollo First Med Hospitals, Chennai"** by **Ms. K.M. SATHYA DEVI,** II year M.Sc (N), Apollo College of Nursing, was edited for English Language appropriateness by

Signature

A. NAVIN, M.A., B.Ed., M.Phil.,
ASSISTANT PROFESSOR
DEPARTMENT OF ENGLISH

APPENDIX – VI

RESEARCH PARTICIPANT'S CONSENT FORM

Dear Participant,

I am K.M.SATHYA DEVI, M.Sc. Nursing student of Apollo College of Nursing, Chennai. As a part of my study, I have selected a Research Project on "A Quasi- experimental study to assess the effectiveness of clinical pathway for postnatal mothers with vaginal delivery upon the knowledge and practice of nurses and maternal outcome at Apollo First Med Hospitals, Chennai."

I hereby seek your consent and co-operation to participate in the study. Please be frank and honest in your response. The information collected will be kept confidential and anonymity will be maintained.

Signature of the Researcher

I ……, hereby give my consent to participate in the study.

Signature of the Participant

APPENDIX – VII

DEMOGRAPHIC VARIABLE PROFORMA FOR NURSES

Purpose:

This proforma is used by the researcher to collect the information on demographic variables of nurses such as age, religion, educational status, marital status, type of the residence, professional experience (in years), income, previous knowledge on clinical pathway and sources of information about clinical pathway.

Sample Number ☐

1. Age in years

1.1 21-24 ☐

1.2 25-28 ☐

1.3 29- 32 ☐

1.4 ≥ 32 ☐

2. Religion

2.1 Hindu ☐

2.2 Muslim ☐

2.3 Christian ☐

2.4 Others ☐

3. Educational status

3.1 ANM ☐

3.2 Diploma in nursing ☐

3.3 BSc nursing ☐

3.4 Post certificate course ☐

4. Marital status

4.1 Married ☐

4.2 Single ☐

5. Type of the residential area

5.1 Home ☐

5.2 Hostel ☐

6. Years of experience

6.1 ≤ 1 ☐

6.2 2 ☐

6.3 3 ☐

6.4 ≥ 4 ☐

7. Income per month in Rupees

7.1 < 5000 ☐

7.2 5001-7500 ☐

7.3 7501-10,000 ☐

7.4 > 10,001 ☐

8. **Previous information acquired regarding clinical pathway**

8.1 Yes ☐

8.2 No ☐

9. **If yes, what was the source of information?**

9.1 Books ☐

9.2 Journals ☐

9.3 Magazines ☐

9.4 colleagues ☐

9.5 Previous work experience ☐

9.6 Researcher ☐

APPENDIX – VIII

DEMOGRAPHIC VARIABLE PROFORMA FOR POSTNATAL MOTHERS WITH VAGINAL DELIVERY

Purpose:

This Proforma is used to measure the demographic variables of postnatal mothers such as age in years, religion, education, occupation, age at marriage, type of family and income of the family in rupees.

Instruction:

Please put a tick mark (√) in the following options.

Please be frank in answering.

Sample no ☐

1. Age in years

1.1 ≤ 20 ☐

1.2 21-25 ☐

1.3 26-30 ☐

1.4 ≥ 30 ☐

2. Religion

2.1 Hindu ☐

2.2 Muslim ☐

2.3 Christian ☐

2.4 Others (specify) ☐

3. Education

3.1 Primary ☐

3.2 Secondary ☐

3.3 Graduate ☐

3.4 Post-graduate ☐

3.5. No formal education ☐

4. Occupation

4.1 Working ☐

4.2 Not working ☐

5. Age at marriage in years

5.1 ≤ 20 ☐

5.2 21-25 ☐

5.3 26-30 ☐

5.4 ≥ 30 ☐

6. Type of the family

6.1 Nuclear ☐

6. 2 Joint

7. Income of the family

7.1 < Rs.5000 ☐

7.2 Rs.5001-7500 ☐

7.3 Rs.7501-10,000 ☐

7.4 > Rs.10, 001 ☐

APPENDIX – IX

OBSTETRIC VARIABLE PROFORMA FOR POSTNATAL MOTHERS WITH VAGINAL DELIVERY

Purpose:

The proforma is used by the researcher to collect information on obstetric variables of mother such as gestational age in weeks, number of antenatal visits, Order of pregnancy.

Instruction:

The researcher will be referring the hospital records of the mother to fill the details.

1. **Gestational weeks at delivered**

1.1 ≤ 35 ☐

1.2 36-37 ☐

1.3 38-39 ☐

1.4 ≥ 40 ☐

2. Number of antenatal visits till date

2.1 No visit ☐

2.2 1 to 4 times ☐

2.3 >4 times ☐

3. Order of pregnancy

3.1 Primi gravida ☐

3.2 Second gravida ☐

3.3 Third gravida ☐

3.4 Multi-gravida ☐

4. Co-morbidity

4.1 H/O illness before pregnancy ☐

4.2 H/O illness during pregnancy ☐

4.3 No history ☐

5. Type of co- morbidity

5.1 Asthma ☐

5.2 Hypertension ☐

5.3 Diabetes mellitus ☐

5.4 Others ☐

6. Mode of delivery

6.1 Normal vaginal delivery with episiotomy ☐

6.2 Assisted forceps delivery ☐

6.3 Assisted vacuum delivery ☐

7. Complications during postnatal period

7.1 Yes ☐

7.2 No ☐

8. If yes, type of complications

8.1 PPH ☐

8.2 Breast complications ☐

8.3 Infection ☐

8.4 Sub-involution of uterus ☐

8.5 Others ☐

APPENDIX – X

BLUE PRINT ON

STRUCTURED KNOWLEDGE QUESTIONNAIRE OF NURSES REGARDING CLINICAL PATHWAY FOR POSTNATAL MOTHERS WITH VAGINAL DELIVERY

S. No	Content	Items	Total Items	Percentage
1.	Clinical pathway	1,2,3,4,5	5	20%
2.	Immediate and late postnatal care	6,7,8,9,10 11,12,13,14,15 16,17	12	48%
3.	Newborn care Health education	18,19,20,21,22 23,24,25	8	32%
Total			25	100%

STRUCTURED KNOWLEDGE QUESTIONNAIRE OF NURSES REGARDING CLINICAL PATHWAY FOR POSTNATAL MOTHERS WITH VAGINAL DELIVERY

Purpose : This structured interview schedule is used to collect information on knowledge of nurses regarding clinical pathway for postnatal mothers with vaginal delivery.

Instructions : This structured interview schedule consists of multiple choice questions. Please read the questions and the answers given. Place a (√) mark against the right answers for each answers for each question. Please be frank in your responses. The information collected will be kept confidential and anonymity will be maintained.

1. The clinical pathway means

a. Multi-disciplinary actions consists sequence of events ☐

b. Multi-disciplinary actions consists steps of procedures ☐

c. Multi-disciplinary actions consists sequence and timings of care ☐

d. Multi-disciplinary actions consists schematic representation of care ☐

2. Clinical pathway helps healthcare organisations EXCEPT

a. To reduce length of hospital stay and cost ☐

b. To improve the satisfaction of customers ☐

c. To decrease the burden of documentation ☐

d. To decrease in standard of care ☐

3. Clinical pathway team consists of

a. Nurses ☐

b. Physician

c. Multi-disciplinary team

d. Administrative officers ☐

4. Synonymous for clinical pathway is

a. Care maps ☐

b. Clinical frameworks ☐

c. Protocols ☐

d. Policies ☐

5. Issues related to clinical pathway is

a. Problems in documentation ☐

b. Risk for acceptance in workplace ☐

c. Increases the cost for implementation ☐

d. Reduces the quality of care ☐

6. The objectives of postnatal care includes the following EXCEPT

a. To reduce morbidity rate ☐

b. To provide care for the rapid restoration of the mother to optimum health ☐

c. To prevent complications of the postnatal period ☐

d. To provide basic health education to the mother/ family ☐

7. The fundus of the uterus lies immediately following delivery at the level of

a. Symphysis pubis ☐

b. Umbilicus ☐

c. Within the pelvis ☐

d. Between Symphysis pubis and umbilicus ☐

8. The immediate nursing responsibility for the mother following delivery of the baby is to monitor

a. Vital signs ☐

b. Haemoglobin ☐

c. Psychological changes ☐

d. Urine output ☐

9. The responsibility of the nurse soon after transferring the mother to postnatal ward is

a. To provide adequate rest ☐

b. To assess the uterus contraction for its involution ☐

c. To provide supportive devices ☐

d. To teach about postnatal exercises ☐

10. Breast feeding should be initiated

a. Immediately after the birth of the baby ☐

b. Half an hour after the birth of the baby ☐

c. Two hour after the birth of the baby ☐

d. Four hour after the birth of the baby ☐

11. The advantage of early ambulation is to

a. Improve self-satisfaction ☐

b. Reduce bleeding ☐

c. Improve circulation, prevention of venous thrombosis and constipation. ☐

d. Reduce infection ☐

12. Well balanced diet helps the postnatal mother

a. To prevent constipation ☐

b. To prevent the infection ☐

c. To prevent the breast complications ☐

d. To meet the increased demands of the body during lactation period ☐

13. Essential nutrients needed by the mother during lactation are

a. Carbohydrates and Minerals ☐

b. Minerals and Vitamins ☐

c. Carbohydrates, Fat and Protein ☐

d. Proteins and Vitamins ☐

14. The amount of fluid that a postnatal mother should consume per day is

a. 500-1000ml ☐

b. 1000-1500ml ☐

c. 1500-2000ml ☐

d. 2000ml-2500ml ☐

15. The consumption of fibre rich diet during postnatal period helps to

a. Prevent gastric ulcer ☐

b. Prevent constipation ☐

c. Prevent anaemia ☐

d. Prevent breast complication ☐

16. The maintenance of personal hygiene helps the postnatal mother

a. To promote sense of well-being ☐

b. To promote, preserve health and aesthetic sense ☐

c. To prevent infection ☐

d. All of the above ☐

17. A nurse should instruct the mother to clean the perineum from

a. Lateral to medial ☐

b. Central to lateral ☐

c. Posterior to Anterior ☐

d. Anterior to Posterior ☐

18. The nurses should instruct the mother about the importance of

Feeding the colostrums helps in

a. Nourishing the baby ☐

b. Protection from respiratory problems ☐

c. Providing immunity and laxative actions ☐

d. Protection from congenital problems ☐

19. Instruct the mother to feed the baby at each breast for the duration of

a. 10-15 minutes ☐

b. 15-30 minutes ☐

c. 30-45 minutes ☐

d. 45 min-1 hour ☐

20. The nurses must promote Rooming-in is to

a. Promotion of bonding between mother and the baby ☐

b. Prevention of infection ☐

c. Avoid confusion ☐

d. Reduction of space occupied by the baby in newborn ward ☐

21. The pelvic floor exercises during postnatal helps to

a. Prevent deep vein thrombosis ☐

b. Strengthen the pelvic floor muscles ☐

c. Prevent infection ☐

d. Reduce bleeding ☐

22. Homan's sign is elicited by

a. Dorsiflexion at the ankle of the foot ☐

b. Flexion of the foot ☐

c. Extension of the foot ☐

d. Hyper extension of the foot ☐

23. The nurse must know these Fever, malaise and headache are symptoms of

a. Puerperal pyrexia ☐

b. Puerperal sepsis ☐

c. Puerperal abscess ☐

d. Puerperal bleeding ☐

24. The nursing intervention for the mother with perineal haematoma is

a. Application of ice pack for first24-48hrs ☐

b. Assessment of REEDA score ☐

c. Providing sitz bath ☐

d. Administering medications as prescribed ☐

25. The essential nurse's role during discharge of the mother related to baby is

a. Advice to come for follow-up ☐

b. Teach about bathing of the baby ☐

c. Give exclusive breast feeding ☐

d. Keep the baby clean ☐

Key Answers

1. c
2. d
3. c
4. a
5. b
6. d
7. b
8. a
9. b
10. b
11. c
12. d
13. a
14. c
15. b
16. d
17. d
18. c
19. a
20. a
21. b
22. a
23. a
24. a
25. c

Percentage	**Interpretation**
≤50%	Inadequate knowledge
51-75%	Moderately adequate knowledge
≥ 76%	Adequate knowledge

APPENDIX – XI

CLINICAL PATHWAY PRACTICE CHECKLIST FOR POSTNATAL MOTHER WITH VAGINAL DELIVERY

Name of the mother :

Age :

IP no/ Ward :

Date and time of delivery :

Sex of the baby :

Note:

1. **Compliant(C)** **:** It refers to an activity that has been completed by the nurse, then the researcher mention as compliance
2. **Partially compliant(PC)** **:** It indicates that the nurse attempted to perform the activity but not completed, then the researcher mention as partially compliance.
3. **Non-compliant(NC)** **:** It refers to an activity neither attempted nor completed, then the researcher mention as non-compliance
4. **Variance(V)** **:** It refers to the deviation of the nursing activity purposefully, then the researcher mention as variance.

CLINICAL PATHWAY PRACTISE CHECKLIST

S no	1-4 hours	C	PC	NC	4-24 hours	C	PC	NC	24-48 hours	C	PC	NC
1.	**Immediate assessment** ➢ Assess and record the involution of uterus ➢ Monitor and record the flow and status of Lochia ➢ Assess and record the general condition of the mother ➢ Assess and record vital signs				**Immediate assessment** ➢ Assess and record the involution of uterus ➢ Monitor and record for flow of Lochia rubra ➢ Assess and record the general condition of the mother ➢ Assess and record REEDA score in episiotomy wound is 0 ➢ Assess for perineal hematoma(if any) ➢ Inform to the doctors if haematoma presence				**Immediate assessment** ➢ Assess and record the involution of uterus ➢ Monitor and record the status of Lochia rubra ➢ Assess and record the general condition of the mother. ➢ Assess and record REEDA score in episiotomy is 0			

2.	**Oxygenation** ➢ Assess and record the oxygen need of the mother. ➢ Provide and maintain proper ventilation ➢ Suction the newborn ➢ If need provide oxyhood for the newborn				**Oxygenation** ➢ Provide and maintain adequate ventilation ➢ Teach and demonstrate about the deep breathing exercises				**Oxygenation** ➢ Provide and maintain adequate ventilation			
3.	**Nutrition** ➢ Keep NBM as per condition of the mother ➢ Assess and provide bland diet/ normal diet ➢ Assess the fluid status and encourage adequate fluid intake				**Nutrition** ➢ Encourage and provide balanced diet ➢ Encourage fluid intake ➢ Administer nutritional supplements as prescribed				**Nutrition** ➢ Explain about the nutritional requirements of the mother during lactation. ➢ Encourage to take adequate fluid intake ➢ Administer nutritional supplements			

	➢ Administer nutritional supplements											
4.	**Elimination** ➢ Assess for voiding pattern of the mother ➢ Assess and provide care for Haemorrhoid if present				**Elimination** ➢ Maintain and record I/O of the mother ➢ Assess and prevent the complication of constipation				**Elimination** ➢ Assess and maintain I/O of the mother ➢ Assess and record the regular bowel pattern			
5.	**Position** ➢ Provide comfortable position ➢ Teach about the different positions for breast feeding				**Position** ➢ Provide comfortable position				**Position** ➢ Provide comfortable position			
6.	**Rest** ➢ Promote and provide				**Rest** ➢ Promote and provide adequate rest and sleep.				**Rest** ➢ Promote and provide rest and sleep			

	adequate rest immediately after delivery ➢ Encourage adequate sleep hours ➢ Explain and restrict the visitors											
7.	**Comfort** ➢ Encourage to have body cleanliness ➢ Assess for pain at perineum ➢ Provide sitz bath as prescribed. ➢ Administer pain medications as prescribed				**Comfort** ➢ Encourage overall cleanliness ➢ Assess and record Afterpain ➢ Assess and provide comfort measures ➢ Administer pain medications as prescribed				**Comfort** ➢ Encourage overall cleanliness ➢ Administer pain medications as prescribed			
8.	**Regulatory functions** ➢ Assess and record vital signs -Temperature				**Regulatory functions** ➢ Assess and record vital signs -Temperature -Pulse				**Regulatory functions** ➢ Assess and record vital signs -Temperature -Pulse			

	-Pulse -Respirations -Blood pressure ➢ Assess and record the signs and symptoms of complications				-Respirations -Blood pressure				-Respirations -Blood pressure			
9.	**Personal hygiene** ➢ Teach and demonstrate the breast care ➢ Explain and encourage about breast care ➢ Teach and demonstrate about the perineal care				**Personal hygiene** ➢ Explain and encourage to take bath daily ➢ Explain and encourage about breast care ➢ Encourage to have perineal hygiene				**Personal hygiene** 9.1 Explain and encourage to take bath daily 9.2 Explain and encourage about breast care 9.3 Encourage to have perineal care			
10.	**Safety** **Mother** ➢ Provide non-slippery floors ➢ Orient and arrange the articles nearby				**Safety** **Mother** ➢ Assist with the mother while doing activity ➢ Involve family				**Safety** ➢ Encourage to take precautions while doing activity ➢ Administer antibiotic as prescribed			

	table ➢ Assess and record the signs and symptoms of early complications ➢ Provide well protected cradle to the newborn ➢ Administer medications as prescribed ➢ Administer RhoGAM immunoglobulin if the mother is Rh incompatibility. **Newborn** ➢ Promote breast feeding at the earlier. ➢ Explain and promote Rooming-in ➢ Teach and demonstrate about the kangaroo care				members to prevent injury/fall ➢ Administer medications as prescribed ➢ Administer RhoGAM if not administered. ➢ Assess and record the status of the rubella ➢ Get consent for the rubella vaccines if present **Newborn** ➢ Administer Vit. K as per order ➢ Administer OPV to the newborn ➢ Administer BCG vaccine within 24 hours							

	➢ Teach and demonstrate the mummification of the newborn ➢ Restrict the visitors ➢ Explain to avoid frequent handling of the newborn											
11.	**Communication** ➢ Maintain good rapport while caring mother ➢ Explain adequately before doing procedures ➢ Communicate all activities performed to mother and the newborn				**Communication** ➢ Explain and involve family members during the care of mother and the newborn ➢ Maintain good rapport ➢ Be gentle while doing care to the mother and newborn				**Communication** ➢ Explain all activities adequately with good rapport			
12.	**Spiritual** ➢ Provide spiritual orientation to the mother and her				**Spiritual** ➢ Meet the spiritual need of the mother				**Spiritual** ➢ Meet the spiritual need of the mother			

	family members ➢ Meet the spiritual need of the mother											
13.	**Activity** ➢ Encourage early ambulation ➢ Assist the mother when out of bed for the first time				**Activity** ➢ Encourage ambulation ➢ Teach and demonstrate about the postnatal exercises ➢ Deep breathing exercises ➢ Leg and arm exercises ➢ Coughing exercises ➢ Kegel's exercises ➢ Back exercises ➢ Assess the Homan's sign by dorsi-flexion of the ankle of the foot and it causes pain at the calf muscles.				**Activity** ➢ Encourage postnatal exercises			
14.	**Diversional needs** ➢ Provide psychological support ➢ Provide diversional support				**Diversional needs** ➢ Encourage the family members to involve in the mother and baby care.				**Diversional needs** ➢ Encourage the mother to involve in baby care			

15.	**Health teaching** **Self care** ➢ Teach and demonstrate about self-massage of fundus ➢ Explain about perineal care and sitz bath ➢ Encourage to wear tight braissere **Baby care** ➢ Assist in feeding the newborn.				**Health teaching** ➢ **Assist and encourage Coping with family routine** **Baby care** ➢ Explain and demonstrate about o Newborn suctioning o Positioning o Feeding o Diaper change o Cord care. ➢ Teach and demonstrate about the baby bath				**Health teaching** 15.1 Teach about discharge follow-up 15.2 Teach and provide immunisation schedule			
16.	**Discharge plan** ---				**Discharge plan** ➢ Assess and record the general condition of the mother and the newborn ➢ Prepare for discharge summary				**Discharge plan** ➢ Teach and prepare for discharge			

Percentage	Interpretation
≤50%	Non-Compliant
51-75%	Partially compliant
≥ 76%	Compliant

APPENDIX – XII

BLUE PRINT ON

RATING SCALE ON SATISFACTION OF NURSING CARE FOR THE POSTNATAL MOTHERS WITH VAGINAL DELIVERY

S.No	Content	Items	Total Items	Percentage
1.	Environment Comfort Nursing care	1,2,17,3,10	5	25%
2.	Nutrition Elimination Activity	4,5,6,7,9	5	25%
3.	Rest Position Personal hygiene Safety Spiritual need	8,11,12,13,16	5	25%
4.	Communication Family involvement Health education Discharge plan	14,15,18,19,20	5	25%
	Total	--	20	100%

RATING SCALE ON SATISFACTION OF NURSING CARE FOR THE POSTNATAL MOTHERS WITH VAGINAL DELIVERY

Purpose: The rating scale is designed to assess the level of satisfaction of the patients regarding the nursing care. This is assessed by the researcher after implementation of clinical pathway.

Instruction: There are times given below. Kindly read the items. Responses extend from highly satisfied to dissatisfy. Describe your satisfaction regarding nursing care. Give your responses freely and frankly. The responses will be kept confidential.

S. No	Items	Highly Satisfied 4	Moderately Satisfied 3	Just Satisfied 2	Dissatisfied 1
1.	Have you felt comfortable with the environment provided for you?				
2.	Are you comfortable when doing procedures?				
3.	Are you satisfied with the explanation given before the procedures?				
4.	Are you satisfied with the instruction given about the balanced diet with nutritional requirements?				
5.	Are you satisfied with the timings of food provided for you?				
6.	Are you prevented from the complications of constipation?				
7.	Are you comfortable with the				

	early ambulation provided by the nurses?				
8.	Are you satisfied with the privacy provided by the nurse during you rest and sleep?				
9.	Are you satisfied with the nurses assisting for your daily activities?				
10.	Are you felt satisfied by the explanation given by the nurses about breast feeding?				
11.	Are you comfortably placed when doing procedure?				
12.	Are you satisfied with the personal hygiene provided by the nurse?				
13.	Are you satisfied with the safety measures provide by the nurse?				
14.	Are you satisfied with the communicating nature of the nurses?				
15.	Are you comfortable with the IPR and human behaviour of the nurse?				
16.	Are you satisfied with the spiritual need met by the nurse?				
17.	Are you satisfied with the timely administration of medications with explanation				

	of actions, dose, route, frequency and its side-effects?				
18.	Are you felt comfortable with the family members support?				
19.	Are you satisfied with the instruction given by the nurse about the suctioning, feeding, positioning and diaper changing for newborn?				
20.	Are you comfortable with the services provided for you and discharge plan?				

Percentage	**Interpretation**
≤50%	Low satisfaction
51-75%	Moderately satisfaction
≥ 76%	Highly satisfaction

APPENDIX – XIII

RATING SCALE ON MATERNAL OUTCOME OF POSTNATAL MOTHERS WITH VAGINAL DELIVERY

Purpose:

This rating provides information of maternal outcome through clinical pathway at 48hrs.

Score 0 – Not developed complications

Score 1 – Developed complications and treated

Score 2 – Present with complications

S No	Maternal outcome	Scores		
		0	**1**	**2**
1.	**Regulatory functions**	Stable vital signs T- 98.4◦F P-72-80/min R-18-22/min BP- 120/80mm of Hg	Slight alteration in vital signs T- 99-100◦F P-80-90/min R-22-28/min BP- 130/90mm of Hg	Unstable vital signs T- >100◦F P->90/min R->30/min BP- 140/100mm of Hg
2.	**Oxygenation**	Maintaining oxygenation with room air.	Maintaining oxygenation with intermittent O2 supply	Maintaining oxygenation with continuous O2 support
3.	**Nutrition**	Fluid intake->2000ml/day	Fluid intake-1000-1500ml/day	Fluid intake-<1000ml/day
4.	**Nature of Lochia**	Pad saturation- 4 inches in 1 hour	Pad saturation- 1 pad within hour	Pad saturation – 1 pad saturated within 15 min
5.	**Involution of uterus**	Involution of uterus by 1.5cms everyday	Involution occurs by 0.5cm everyday	Sub-involution
6.	**Elimination**	Voids-1500ml/day Defecates once/day	Voids-1000ml/day Defecates twice daily	Voids- <500ml/day Defecates loose

				stools or constipation
7.	**Rest**	Sleeps for about >6hrs a day	Sleeps for about 5-6hrs a day	Sleeps for about 4-5hrs a day
8.	**Comfort**	Pain score is 1-2/10	Pain score is 3-4/10	Pain score is >5/10
9.	**Personal hygiene**	Well groomed Taking bath Normal REEDA score	Ungroomed Not taking bath	Ungroomed Abnormal REEDA score
10.	**Communication**	Speaks well Responds for the questions	Sometimes elated Sometimes depressed	Not responding to the questions
11.	**Activity**	Ambulated and walked early	Ambulated but not walking	Not walking
12.	**Diversional needs**	Not necessary	Few clarification needs	Fully support on diversional needs
13.	**Health teaching**	Breast feeding is well established Safe handling of newborn Presence of Rooming-in	Poorly breast feeding Poorly carrying of newborn Poorly Rooming- in	Not breast feeding Not carrying newborn No Rooming-in
14.	**Discharge plan**	Discharged before expected day of discharge	Extended hours of stay	Extended days of stay

Percentage	**Interpretation**
≤50%	Major complication
51-75%	Minor complication
≥ 76%	No complication

CLINICAL PATHWAY

Critical Pathways: A New Form of Clinical Guideline

Introduction

Critical pathways have varying formats and are known by many names, including critical paths, clinical pathways, and care paths. Interpreted formally, a critical pathway is the sequence of events in a process that takes the greatest length of time. Like the techniques of continuous quality improvement, critical pathway techniques were first developed for use in industry as a tool to identify and manage the rate-limiting steps in production processes. In an era of increasing competition in medical care, critical pathway guidelines have emerged as one of the most popular new initiatives intended to reduce costs while maintaining or even improving the quality of care.

History

First developed in the 1950s, the Critical Path Method was frequently linked with a similar approach, the Program Evaluation and Review Technique, to coordinate multiple contractors or persons in a project by identifying the key sequence of events, or "critical path," the requirements of which would drive the timeline of the overall project. Critical pathway techniques have subsequently been applied to projects as diverse as construction, civil engineering, town planning, marketing, ship building, product design, and equipment installation.

Critical pathways were first developed and applied to health care in the 1980s, when prospective payment systems focused greater interest on potential methods to

improve hospital efficiency. Most of the first critical pathways in hospitals were developed by nurses for nursing care alone but multidisciplinary teams soon began developing pathways to encompass all aspects of care for hospitalized patient.

In 1996, The National Library of Medicine introduced the term “critical pathway”. Fifteen different entry terms are used in the medical subheading database.

The clinical pathway concept appeared for the first time at the New England Medical Centre (Boston, USA) in 1985 inspired by Karen Zander and Kathleen Bower. Clinical pathways appeared as a result of the adaptation of the documents used in industrial quality management, the Standard Operating Procedures (SOPs), whose goals are:

- Improve efficiency in the use of resources.
- Finish work in a set time.

In April 1991, VNA FIRST used in consultation with the Centre for Case Management, Inc., South Natick, MA, developed the Home Health Care Map Tools (now called VNA FIRST Home Care Steps Protocols.)

In 2005, the tele-health clinical pathway was introduced to standardize tele-health visits and telephone calls in homecare.

Synonymous terms

- Critical pathway
- Integrated pathway
- Care maps
- Case management plans

- Care pathway
- Treatment pathway
- Multidisciplinary pathways of care
- Collaborative care pathways

Definitions for clinical pathway

Care pathways are a methodology for the mutual decision making and organization of care for a well-defined group of patients during a well-defined period.

- **Slovenia (2005)**

A care pathway is a complex intervention for the mutual decision making and organization of care processes for a well- defined group of patients during a well-defined period.

- **Kris Vanhaecht**

A clinical pathway is an optimal sequencing and timing of interventions by caregivers for a particular diagnosis or procedure designed to minimize delays and resource utilization and to maximize the quality of care

- **Coffey et al,1992**

Outcomes are the consequences to the health and welfare of individuals and of society

- **Avidis Donabedian, 1980**

Components of clinical pathway

- Timeline
- Categories of care or activities and their interventions

- Intermediate and long-term outcome criteria
- Variance record (to allow deviations to be documented and analyzed)

Characteristics of care pathways

- An explicit statement of the goals and key elements of care based on evidence, best practice, and patient expectations
- The facilitation of the communication, coordination of roles, and sequencing the activities of the multidisciplinary care team, patients and their relatives
- The documentation, monitoring, and evaluation of variances and outcomes
- The identification of the appropriate resource.
- The aim of a care pathway is to enhance the quality of care by improving patient outcomes, promoting patient safety, increasing patient satisfaction, and optimizing the use of resources.

Goals for pathway development

In general, efforts to develop critical pathways in health care have not incorporated the formal techniques used by industrial predecessors to identify the true "critical" pathway in any care process. Instead, when critical pathways are used to plan medical care, the specific goals usually include the following:

1. Selecting a "best practice" when practice styles vary unnecessarily.
2. Defining standards for the expected duration of hospital stay and for the use of tests and treatments.
3. Examining the interrelations among the different steps in the care process to find ways to coordinate or decrease the time spent in the rate-limiting steps.

4. Giving all hospital staff a common “game plan” from which to view and understand their various roles in the overall care process.

5. Providing a framework for collecting data on the care process so that providers can learn how often and why patients do not follow an expected course during their hospitalization.

6. Decreasing nursing and physician documentation burdens.

7. Improving patient satisfaction with care by educating patients and their families about the plan of care and involving them more fully in its implementation.

Team composition

- Physician experts
- Nurses
- Community based physician experts
- Quality management department

Benefits

- Support the introduction of evidence-based medicine and use of clinical guidelines.
- Support clinical effectiveness, risk management and clinical audit.
- Improve multidisciplinary communication, teamwork and care planning.
- Can support continuity and co-ordination of care across different clinical disciplines and sectors.
- Provide explicit and well-defined standards for care.
- Help reduce variations in patient care (by promoting standardization).

- Help improve clinical outcomes.
- Help improve and even reduce patient documentation.
- Support training.
- Optimize the management of resources.
- Can help ensure quality of care and provide a means of continuous quality improvement.
- Support the implementation of continuous clinical audit in clinical practice.
- Support the use of guidelines in clinical practice.
- Help empower patients.
- Help manage clinical risk.
- Help improve communications between different care sectors.
- Disseminate accepted standards of care.
- Provide a baseline for future initiative.
- Expected to reduce risk.
- Expected to reduce costs by shortening hospital stays.

Issues

Potential problems and barriers to the introduction of ICPs (Integrated care pathway)

- May appear to discourage personalized care
- Risk increasing litigation
- Don't respond well to unexpected changes in a patient's condition
- Suit standard conditions better than unusual or unpredictable ones

- Require commitment from staff and establishment of an adequate organizational structure
- Problems of introduction of new technology
- May take time to be accepted in the workplace
- Need to ensure variance and outcomes are properly recorded, audited and acted upon.

Developing Clinical Pathways

Much like the PDCA (plan, do, check & act) and FOCUS (finding a process to improve; organizing a team that knows the process; clarifying knowledge of the process; understanding sources of process variation; and selecting the process improvement) approaches to monitoring and evaluation , similar methods may be used to define clinical pathways. Howland (4) suggests a six-step approach.

Step One: Identifying the Condition, Patient Group or Service

Clinical pathways can be developed for medical conditions, specific patient groups or actual services. For example, a medical condition such as scoliosis or multiple sclerosis may be the focus of a clinical pathway. Similarly, patient groups may be addressed, such as geriatric or pediatric populations. Finally, specific services, such as prostheses for trans-femoral amputees, upper-extremity amputes, etc., also can be used to determine clinical pathways.

High-volume, problem-prone or high-risk issues may serve as the keys to identifying the clinical path issue. Similarly, the dynamics of cost and/or physician or payer interest may help isolate the issue to be addressed.

Step Two: Identifying Key Caregivers and Creating a Team

Caregivers represent the linchpin to successfully developing and implementing clinical pathways. Essential healthcare providers, including institutional providers, must be identified to form a decision team that will define the scope and format of the pathway. In addition, these key caregivers will become the managers of their respective components of the treatment continuum. It also is important to identify peripheral personnel who could be affected by the pathway's requirements, including managed-care case managers and others who influence the intensity of care and choice of treatment centre.

Step Three: Identifying Current Processes and Protocols for Treatment

As the initial activity to establish a template of care from which the pathway will be constructed, the team should evaluate both internal and external processes that contribute to and represent the existing treatment parameters of the issue. The evaluation should respond to such questions as:

- What is done and why?
- What is the value of the current process?
- How could the care be modified, refined or performed more efficiently?
- What are the barriers (access, availability, reimbursement limitations, etc.) to effective treatment?

Step Four: Developing and Implementing the Pathway

On the basis of what is learned about the current processes and what can be identified in the scientific field about deal protocols, the team should carefully construct the pathway. The process requires the team to identify critical services/procedures by specific time intervals for each of the relevant caregivers and associated treatment interventions.

Step Five: Defining Key Conformance Measures and Developing Data Collection Methods

Conformance measures generally will centre on the use of indicators to determine compliance with the specific elements of the pathway. This will include adherence to intervention timelines and involvement of appropriate personnel to deliver the service. Finally, the team should be prepared to interpose appropriate changes or modifications to the pathway to improve performance.

With respect to pathway evaluation data must be collected based on operational definitions of each point along the pathway (defining the elements of the treatment/service and caregiver responsible for the treatment). This face of the pathway regime also requires the use of a specific method of data collection, including the identification of responsible individuals for data and clear explanation of how the data will be used and/or published.

Step Six: Analyzing Results and Instituting Appropriate Refinements

As with the M&E model, clinical pathway programs will aggressively evaluate outcomes results for the purpose of instituting appropriate changes to the pathway. Analysis will include an examination of changes in use of resources; deviations from the pathway; changes in outcomes; and changes or trends in satisfying patient expectations.

Document and Analyze Variance

Variances are patient outcomes or staff actions that do not meet the expectation of the pathway. In general, variance in clinical pathways is a result of the omission of an action or the performance of an action at an inappropriate (often, a late) time period. Because the critical pathway is a series of time-associated actions, this analysis of variance can be overwhelmed by multiple data points.

Computer-assisted pathway analysis can help with this issue. Another approach is for the pathway team to concentrate on a few critical items in the pathway that have been identified in advance, such as extubation time after cardiac surgery or length of stay in the intensive care unit. These are critical intermediate outcomes that may have a substantial number of important contributory factors. Arguably, the selection of areas to analyze and the analysis of variance are among the most important processes in the critical pathway. Identification of factors that contribute to variance and interventions to improve those factors are the key features in process improvement.

Conclusion

Clinical pathway helps in different way to improve in quality of care, reduction in length of stay, timely care provided to the clients, etc. Understanding outcomes measures become increasingly important in today's managed-care environment. Clinical pathways, which permit the evaluation of outcomes according to the impact of each provider and setting of service, identify the critical points of the treatment process that lead to the eventual outcome. Howland's six-step approach to identifying clinical pathways is one useful method for assessing outcomes.

CLINICAL PATHWAY PRACTICE FOR POSTNATAL MOTHER			
S no	**1-4 hours**	**4-24 hours**	**24-48 hours**
1.	**Immediate assessment** ➢ Assess and record the involution of uterus ➢ Monitor and record the flow and status of Lochia ➢ Assess and record the general condition of the mother ➢ Assess and record vital signs	**Immediate assessment** ➢ Assess and record the involution of uterus ➢ Monitor and record for flow of Lochia rubra ➢ Assess and record the general condition of the mother ➢ Assess and record REEDA score in episiotomy wound is 0 ➢ Assess for perineal hematoma(if any) ➢ Inform to the doctors if haematoma presence ➢ Monitor pad saturation	**Immediate assessment** ➢ Assess and record the involution of uterus ➢ Monitor and record the status of Lochia rubra ➢ Assess and record the general condition of the mother. ➢ Assess and record REEDA score in episiotomy is 0
2.	**Oxygenation** ➢ Assess and record the oxygen need of the mother. ➢ Provide and maintain proper ventilation ➢ Suction the newborn ➢ If need provide oxyhood for the newborn	**Oxygenation** ➢ Provide and maintain adequate ventilation ➢ Teach and demonstrate about the deep breathing exercises	**Oxygenation** ➢ Provide and maintain adequate ventilation

3.	**Nutrition** ➢ Keep NBM as per condition of the mother ➢ Assess and provide bland diet/ normal diet ➢ Assess the fluid status and encourage adequate fluid intake	**Nutrition** ➢ Encourage and provide balanced diet ➢ Encourage fluid intake ➢ Administer nutritional supplements as prescribed	**Nutrition** ➢ Explain about the nutritional requirements of the mother during lactation. ➢ Encourage to take adequate fluid intake ➢ Administer nutritional supplements
4.	**Elimination** ➢ Assess for voiding pattern of the mother ➢ Assess and provide care for Haemorrhoid if present	**Elimination** ➢ Maintain and record I/O of the mother ➢ Assess and prevent the complication of constipation	**Elimination** ➢ Assess and maintain I/O of the mother ➢ Assess and record the regular bowel pattern
5.	**Position** ➢ Provide comfortable position ➢ Teach about the different positions for breast feeding	**Position** ➢ Provide comfortable position	**Position** ➢ Provide comfortable position
6.	**Rest** ➢ Promote and provide adequate rest immediately after delivery ➢ Encourage adequate sleep hours ➢ Explain and restrict the visitors	**Rest** ➢ Promote and provide adequate rest and sleep.	**Rest** ➢ Promote and provide rest and sleep

7.	**Comfort** ➢ Encourage to have body cleanliness ➢ Assess for pain at perineum ➢ Provide sitz bath as prescribed. ➢ Administer pain medications as prescribed	**Comfort** ➢ Encourage overall cleanliness ➢ Assess and record Afterpain ➢ Assess and provide comfort measures ➢ Administer pain medications as prescribed	**Comfort** ➢ Encourage overall cleanliness ➢ Administer pain medications as prescribed
8.	**Regulatory functions** ➢ Assess and record vital signs -Temperature -Pulse -Respirations -Blood pressure ➢ Assess and record the signs and symptoms of complications	**Regulatory functions** ➢ Assess and record vital signs -Temperature -Pulse -Respirations -Blood pressure	**Regulatory functions** ➢ Assess and record vital signs -Temperature -Pulse -Respirations -Blood pressure
9.	**Personal hygiene** ➢ Teach and demonstrate the breast care ➢ Explain and encourage about breast care ➢ Teach and demonstrate about the perineal care	**Personal hygiene** ➢ Explain and encourage to take bath daily ➢ Explain and encourage about breast care ➢ Encourage to have perineal hygiene	**Personal hygiene** ➢ Explain and encourage to take bath daily ➢ Explain and encourage about breast care ➢ Encourage to have perineal care

10.	**Safety** **Mother** ➢ Provide non-slippery floors ➢ Orient and arrange the articles nearby table ➢ Assess and record the signs and symptoms of early complications ➢ Administer medications as prescribed ➢ Administer RhoGAM immunoglobulin if the mother is Rh incompatibility. **Newborn** ➢ Promote breast feeding at the earlier. ➢ Explain and promote Rooming-in ➢ Teach and demonstrate about the kangaroo care ➢ Teach and demonstrate the mummification of the newborn ➢ Restrict the visitors ➢ Explain to avoid frequent handling of the newborn	**Safety** **Mother** ➢ Assist with the mother while doing activity ➢ Involve family members to prevent injury/fall ➢ Administer medications as prescribed ➢ Administer RhoGAM if not administered. ➢ Assess and record the status of the rubella ➢ Get consent for the rubella vaccines if present **Newborn** ➢ Administer Vit. K as per order ➢ Administer OPV to the newborn ➢ Administer BCG vaccine within 24 hours	**Safety** ➢ Encourage to take precautions while doing activity ➢ Administer antibiotic as prescribed
11.	**Communication** ➢ Maintain good rapport while caring mother ➢ Explain adequately before doing	**Communication** ➢ Explain and involve family members during the care of mother and the newborn ➢ Maintain good rapport	**Communication** ➢ Explain all activities adequately with good rapport

	procedures ➢ Communicate all activities performed to mother and the newborn	➢ Be gentle while doing care to the mother and newborn	
12.	**Spiritual** ➢ Provide spiritual orientation to the mother and her family members ➢ Meet the spiritual need of the mother	**Spiritual** ➢ Meet the spiritual need of the mother	**Spiritual** ➢ Meet the spiritual need of the mother
13.	**Activity** ➢ Encourage early ambulation ➢ Assist the mother when out of bed for the first time	**Activity** ➢ Encourage ambulation ➢ Teach and demonstrate about the postnatal exercises ➢ Deep breathing exercises ➢ Leg and arm exercises ➢ Coughing exercises ➢ Kegel's exercises ➢ Back exercises ➢ Assess the Homan's sign by dorsi-flexion of the ankle of the foot and it causes pain at the calf muscles.	**Activity** ➢ Encourage postnatal exercises
14.	**Diversional needs** ➢ Provide psychological support ➢ Provide diversional support	**Diversional needs** ➢ Encourage the family members to involve in the mother and baby care.	**Diversional needs** ➢ Encourage the mother to involve in baby care
15.	**Health teaching** **Self care**	**Health teaching** ➢ **Assist and encourage Coping with**	**Health teaching** 15.1Teach about discharge follow-up

	➢ Teach and demonstrate about self-massage of fundus ➢ Explain about perineal care and sitz bath ➢ Encourage to wear tight braissere **Baby care** ➢ Assist in feeding the newborn.	**family routine** **Baby care** ➢ Explain and demonstrate about o Newborn suctioning o Positioning o Feeding o Diaper change o Cord care. ➢ Teach and demonstrate about the baby bath ➢ Provide knowledge regarding temporary /permanent family planning methods	15.2 Teach and provide immunisation schedule ➢ 15.3 Motivate the mother for temporary/ permanent family planning methods.
16.	**Discharge plan** ---	**Discharge plan** ➢ Assess and record the general condition of the mother and the newborn ➢ Prepare for discharge summary	**Discharge plan** ➢ Teach and prepare for discharge

APPENDIX – XIV

DATA CODE SHEET FOR NURSES

Demographical variables and Knowledge level of for nurses

S No	**Sample No**
RELI	**Religion**
	3.1Hindu
	3.2Muslim
	3.3Christian
EDU	**Educational status**
	4.1ANM
	4.2Diploma in nursing
	4.3BSc nursing
	4.4Post certificate course
MS	**Marital status.**
	5.1Married
	5.2Single
TOR	**Type of the residential area**
	6.1Home
	6.2Hostel
YOE	**Years of experience**
	7.1≤ 1
	7.22
	7.33
	7.4≥ 4
IPM	**Income per month in Rupees**
	8.1< 5000
	8.25001-7500
	8.37501-10,000
	8.4> 10,001
IRCP	**Previous information acquired regarding clinical pathway**
	9.1Yes
	9.2No
SOI	**If yes, what was the source of information?**
	10.1Books
	10.2 Journals
	10.3 Magazines
	10.4colleagues
	10.5Previous work experience
SCO	**Scores**
LEV	**Level of Knowledge**

APPENDIX – XIV

DATA CODE SHEET FOR POSTNATAL MOTHERS WITH VAGINAL DELIVERY

Demographic variables and Obstetrical variables for Postnatal mothers with vaginal delivery

S No	**Sample No**
RELI	**Religion**
	4.1Hindu
	4.2Muslim
	4.3Christian
EDU	**Education**
	5.1Primary
	5.2Secondary
	5.3 Graduate
	5.4 Post-graduate
OCCU	**Occupation**
	6.1Working
	6.2Not working
AAM	**Age at marriage in years**
	7.1≤ 20
	7.221-25
	7.326-30
	7.4≥ 30
TOF	**Type of the family**
	8.1Nuclear
	8. 2Joint
IOF	**Income of the family**
	9.1 < Rs.5000
	9.2 Rs.5001-7500
	9.3Rs.7501-10,000
	> Rs.10, 001
GWD	**Gestational weeks at delivered**
	1.1≤ 35
	1.236-37
	1.338-39
	1.4≥ 40
NOAV	**Number of antenatal visits till date**
	2.1 No visit
	2.2 1 to 4 times
	2.3>4 times

OFP	**Order of pregnancy**
	3.1Primi gravida
	3.2Second gravida
	3.3Third gravida
	3.4Multi-gravida
COM	**Co-morbidity**
	4.1H/O illness before pregnancy
	4.2H/O illness during pregnancy
	4.3No history
TOC	**Type of co- morbidity**
	5.1Asthma
	5.2Hypertension
	5.3Diabetes mellitus
	5.4Others
MOD	**Mode of delivery**
	6.1Normal vaginal delivery with episiotomy
	6.2Assisted forceps delivery
	6.3Assisted vacuum delivery
COMP	**Complications during postnatal period**
	7.1Yes
	7.2No
TOC	**If yes, type of complications**
	8.1PPH
	8.2Breast complications
	8.3Infection
	8.4Sub-involution of uterus
	8.5Others
SCO	**Scores**
LEV	**Level of satisfaction**
PER	**Percentage**

APPENDIX - XV

MASTER CODE SHEET FOR NURSES

S NO	DEMOGRAPHIC VARIABLES									KNOWLEDGE QUESTIONNAIRE	
										PRE-TEST	POST-TEST
	AGE	RELI	EDU	MS	TOR	YOE	IPM	IRCP	SOI	SCO	SCO
1	1.1	2.3	3.3	4.2	5.1	6.3	7.3	8.1	9.1	20	23
2	1.1	2.1	3.2	4.2	5.2	6.1	7.2	8.2	-	15	24
3	1.1	2.3	3.3	4.2	5.1	6.2	7.2	8.1	9.1	21	22
4	1.2	2.1	3.3	4.2	5.2	6.3	7.3	8.1	9.4	17	24
5	1.1	2.1	3.2	4.2	5.1	6.4	7.3	8.2	-	12	23
6	1.1	2.3	3.3	4.2	5.3	6.3	7.2	8.2	-	15	21
7	1.1	2.3	3.2	4.2	5.2	6.1	7.1	8.1	9.1	7	22
8	1.1	2.1	3.2	4.2	5.2	6.3	7.2	8.2	-	12	23
9	1.1	2.1	3.2	4.2	5.2	6.2	7.2	8.1	9.1	18	24
10	1.2	2.1	3.2	4.2	5.2	6.4	7.2	8.1	9.1	13	21
11	1.2	2.3	3.3	4.2	5.2	6.3	7.3	8.2	-	16	18
12	1.1	2.3	3.2	4.2	5.2	6.1	7.1	8.2	-	12	23
13	1.4	2.1	3.2	4.1	5.1	6.4	7.4	8.1	-	18	23
14	1.1	2.1	3.2	4.2	5.2	6.2	7.2	8.2	-	17	24
15	1.2	2.3	3.2	4.2	5.2	6.4	7.4	8.2	-	16	25
16	1.1	2.3	3.2	4.2	5.2	6.4	7.2	8.2	-	11	21
17	1.2	2.3	3.2	4.1	5.1	6.2	7.2	8.2	-	10	21
18	1.1	2.1	3.3	4.2	5.2	6.2	7.2	8.2	-	14	23
19	1.2	2.3	3.3	4.2	5.2	6.2	7.2	8.2	-	17	24
20	1.1	2.3	3.2	4.1	5.1	6.3	7.2	8.2	-	18	23
21	1.1	2.1	3.3	4.2	5.2	6.1	7.1	8.1	9.4	18	22
22	1.2	2.1	3.3	4.2	5.2	6.2	7.2	8.2	-	18	20
23	1.1	2.1	3.2	4.2	5.2	6.3	7.3	8.2	-	20	23
24	1.1	2.1	3.3	4.2	5.2	6.1	7.2	8.1	9.4	13	22
25	1.1	2.3	3.2	4.2	5.2	6.1	7.1	8.2	-	17	21
26	1.1	2.3	3.3	4.2	5.2	6.1	7.1	8.1	9.4	14	19
27	1.1	2.1	3.3	4.2	5.2	6.2	7.2	8.2	-	17	21
28	1.1	2.3	3.3	4.2	5.2	6.1	7.2	8.2	-	8	20
29	1.1	2.3	3.2	4.2	5.2	6.1	7.1	8.2	-	11	18
30	1.1	2.3	3.2	4.2	5.2	6.3	7.1	8.2	-	19	23
31	1.1	2.1	3.3	4.1	5.1	6.2	7.1	8.1		15	23
32	1.1	2.3	3.2	4.2	5.2	6.3	7.2	-		11	23
33	1.4	2.3	3.2	4.2	5.2	6.4	7.2	-		16	24
34	1.1	2.3	3.2	4.2	5.1	6.1	7.2	-		12	25
35	1.1	2.1	3.3	4.2	5.2	6.1	7.1	8.1		14	24
36	1.1	2.3	3.2	4.2	5.2	6.2	7.1	8.1		15	22
37	1.1	2.1	3.3	4.2	5.1	6.3	7.1	8.1		17	24
38	1.1	2.3	3.2	4.2	5.2	6.3	7.2	-		14	22
39	1.1	2.3	3.2	4.2	5.2	6.1	7.2	-		14	23
40	1.1	2.1	3.1	4.2	5.2	6.4	7.2	-		11	24

APPENDIX – XV

MASTER CODE SHEET FOR POSTNATAL MOTHERS WITH VAGINAL DELIVERY (CONTROL GROUP)

S NO	DEMOGRAPHIC VARIABLES							OBSTETRICAL VARIABLES(CG)							SATISFACTION	OUTCOME	CP
	AGE	RELI	EDU	OCCU	AAM	TOF	IOF	GWD	NOAV	OFP	COM	TOC	COMP	MOD	SCO	SCO	SCO
1	1.3	2.1	3.3	4.1	5.2	6.2	7.4	1.2	2.3	3.1	4.3	-	6.2	8.1	73	0	218
2	1.2	2.3	3.3	4.1	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.1	72	0	210
3	1.3	2.1	3.3	4.1	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.1	80	0	208
4	1.2	2.1	3.3	4.1	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.3	80	0	209
5	1.3	2.1	3.3	4.1	5.2	6.2	7.4	1.3	2.3	3.2	4.3	-	6.2	8.1	72	2	210
6	1.4	2.1	3.3	4.2	5.3	6.2	7.4	1.2	2.3	3.2	4.3	-	6.2	8.1	80	2	210
7	1.4	2.2	3.3	4.2	5.3	6.2	7.4	1.2	2.3	3.1	4.3	-	6.2	8.1	76	10	210
8	1.3	2.1	3.3	4.1	5.2	6.1	7.4	1.3	2.3	3.1	4.3	-	6.2	8.1	73	6	214
9	1.4	2.2	3.3	4.2	5.3	6.2	7.4	1.3	2.3	3.3	4.3	-	6.2	8.1	73	4	209
10	1.3	2.1	3.3	4.1	5.2	6.2	7.4	1.4	2.3	3.1	4.3	-	6.2	8.1	65	0	214
11	1.3	2.3	3.3	4.1	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.1	80	0	217
12	1.4	2.3	3.4	4.1	5.4	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.1	76	6	214
13	1.2	2.1	3.3	4.1	5.2	6.2	7.4	1.3	2.3	3.2	4.1	5.3	6.2	8.1	64	10	211
14	1.3	2.1	3.3	4.1	5.2	6.2	7.4	1.2	2.3	3.2	4.3	-	6.2	8.3	80	0	216
15	1.1	2.1	3.2	4.2	5.2	6.1	7.4	1.3	2.3	3.1	4.3	-	6.2	8.3	73	0	212

S NO	DEMOGRAPHIC VARIABLES							OBSTETRICAL VARIABLES(CG)							SATISFACTION	OUTCOME	CP
	AGE	RELI	EDU	OCCU	AAM	TOF	IOF	GWD	NOAV	OFP	COM	TOC	COMP	MOD	SCO	SCO	SCO
16	1.3	2.1	3.3	4.1	5.3	6.2	7.4	1.3	2.3	3.2	4.3	-	6.2	8.1	61	4	213
17	1.3	2.1	3.3	4.2	5.3	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.3	75	0	212
18	1.2	2.1	3.3	4.1	5.2	6.2	7.4	1.3	2.3	3.1	4.2	5.2	6.2	8.3	56	0	209
19	1.2	2.1	3.2	4.2	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.1	69	2	209
20	1.2	2.1	3.3	4.1	5.2	6.2	7.4	1.3	2.3	3.1	4.1	5.4	6.2	8.3	74	8	211
21	1.3	2.1	3.3	4.2	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.1	62	4	216
22	1.3	2.3	3.4	4.1	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.3	59	0	214
23	1.2	2.1	3.3	4.1	5.2	6.1	7.4	1.3	2.3	3.1	4.3	-	6.2	8.3	52	0	214
24	1.3	2.1	3.3	4.1	5.3	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.3	66	11	211
25	1.2	2.2	3.2	4.2	5.2	6.1	7.4	1.2	2.3	3.1	4.3	-	6.2	8.3	66	4	207
26	1.2	2.1	3.3	4.1	5.1	6.1	7.4	1.3	2.3	3.1	4.1	5.4	6.2	8.3	75	9	211
27	1.1	2.1	3.1	4.2	5.1	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.1	42	6	208
28	1.2	2.1	3.2	4.2	5.1	6.2	7.4	1.4	2.3	3.2	4.3	-	6.2	8.1	48	4	211
29	1.1	2.1	3.2	4.2	5.1	6.2	7.4	1.3	2.3	3.1	4.3	-	6.2	8.1	49	4	213
30	1.2	2.1	3.2	4.2	5.2	6.2	7.4	1.4	2.3	3.2	4.3	-	6.2	8.1	54	2	213

APPENDIX – XV

MASTER CODE SHEET FOR POSTNATAL MOTHERS WITH VAGINAL DELIVERY

(EXPERIMENTAL GROUP)

S NO	DEMOGRAPHIC VARIABLES							OBSTETRICAL VARIABLES(EG)								SATISFACTION	OUTCOME	CP
	AGE	RELI	EDU	OCCU	AAM	TOF	IOF	GWD	NOAV	OFP	COM	TOC	MOD	COMP	TOC	SCO	SCO	SCO
1	1.4	2.3	3.3	4.1	5.3	6.1	7.4	1.3	2.3	3.2	4.3	-	6.1	7.2	-	78	0	237
2	1.4	2.1	3.3	4.2	5.4	6.1	7.4	1.4	2.3	3.3	4.3	-	6.1	7.2	-	73	2	236
3	1.2	2.1	3.3	4.2	5.2	6.2	7.4	1.2	2.3	3.2	4.1	5.4	6.1	7.2	-	72	2	236
4	1.3	2.1	3.4	4.1	5.2	6.1	7.4	1.3	2.3	3.1	4.3	-	6.1	7.2	-	80	0	236
5	1.3	2.1	3.3	4.1	5.3	6.2	7.4	1.3	2.3	3.1	4.3	-	6.1	7.2	-	75	0	238
6	1.4	2.1	3.3	4.1	5.3	6.2	7.4	1.3	2.3	3.2	4.3	-	6.1	7.2	-	78	0	238
7	1.2	2.2	3.3	4.2	5.1	6.2	7.4	1.3	2.3	3.1	4.3	-	6.1	7.2	-	74	0	236
8	1.2	2.1	3.3	4.2	5.1	6.1	7.4	1.2	2.3	3.3	4.3	-	6.1	7.2	-	75	4	236
9	1.2	2.2	3.2	4.2	5.1	6.2	7.4	1.3	2.3	3.2	4.3	-	6.1	7.2	-	80	0	236
10	1.2	2.1	3.2	4.2	5.2	6.2	7.4	1.3	2.3	3.2	4.1	5.4	6.1	7.2	-	80	0	229
11	1.3	2.1	3.4	4.2	5.3	6.1	7.4	1.3	2.3	3.1	4.3	-	6.1	7.2	-	79	0	227
12	1.4	2.1	3.4	4.2	5.3	6.2	7.4	1.3	2.3	3.4	4.3	-	6.3	7.2	-	80	0	234
13	1.3	2.1	3.4	4.1	5.2	6.1	7.4	1.3	2.3	3.2	4.3	-	6.1	7.2	-	68	2	234
14	1.2	2.4	3.3	4.2	5.2	6.2	7.4	1.3	2.3	3.1	4.1	5.4	6.2	7.2	-	65	3	235
15	1.3	2.1	3.4	4.2	5.3	6.2	7.4	1.3	2.3	3.1	4.3	-	6.3	7.2	-	60	0	235

S NO	DEMOGRAPHIC VARIABLES							OBSTETRICAL VARIABLES(EG)								SATISFACTION	OUTCOME	CP
	AGE	RELI	EDU	OCCU	AAM	TOF	IOF	GWD	NOAV	OFP	COM	TOC	MOD	COMP	TOC	SCO	SCO	SCO
16	1.3	2.3	3.4	4.1	5.3	6.2	7.4	1.3	2.3	3.1	4.1	5.4	6.1	7.2	-	60	0	237
17	1.3	2.4	3.3	4.2	5.3	6.2	7.4	1.4	2.3	3.1	4.3	-	6.1	7.1	8.1	80	0	235
18	1.2	2.1	3.4	4.4	5.2	6.2	7.4	1.4	2.3	3.1	4.3	-	6.3	7.2	-	72	4	235
19	1.2	2.1	3.4	4.2	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.1	7.2	-	80	0	235
20	1.4	2.1	3.4	4.2	5.4	6.2	7.4	1.2	2.3	3.2	4.3	-	6.1	7.2	-	60	0	235
21	1.3	2.4	3.4	4.2	5.2	6.2	7.4	1.4	2.3	3.1	4.3	-	6.3	7.2	-	77	3	234
22	1.2	2.4	3.4	4.2	5.2	6.2	7.4	1.4	2.3	3.1	4.3	-	6.1	7.2	-	80	0	234
23	1.2	2.4	3.3	4.2	5.2	6.1	7.4	1.3	2.3	3.1	4.3	-	6.1	7.2	-	80	0	234
24	1.4	2.1	3.3	4.1	5.2	6.1	7.4	1.2	2.3	3.3	4.3	-	6.1	7.2	-	80	2	234
25	1.3	2.1	3.4	4.1	5.3	6.2	7.4	1.3	2.3	3.1	4.3	-	6.1	7.2	-	72	2	234
26	1.2	2.4	3.3	4.2	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.3	7.2	-	73	0	236
27	1.2	2.1	3.4	4.1	5.2	6.2	7.4	1.3	2.3	3.1	4.3	-	6.1	7.2	-	75	4	232
28	1.3	2.1	3.3	4.1	5.3	6.2	7.4	1.3	2.3	3.3	4.3	-	6.3	7.1	8.1	73	0	205
29	1.3	2.3	3.4	4.2	5.3	6.2	7.4	1.4	2.3	3.1	4.3	-	6.3	7.2	-	75	0	205
30	1.3	2.1	3.3	4.2	5.2	6.2	7.4	1.2	2.3	3.3	4.3	-	6.3	7.2	-	80	0	236

APPENDIX – XVI

PLAGIARISM ORIGINALITY REPORT

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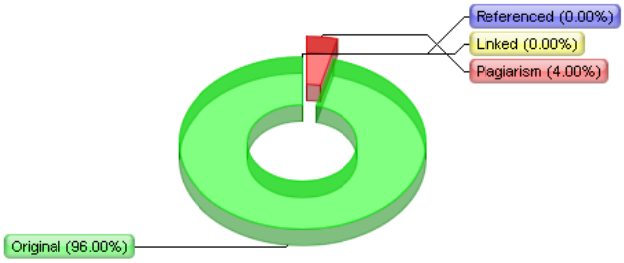

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APPENDIX – XVII

PHOTOGRAPH DURING DATA COLLECTION